Set Name side by side	Query	Hit Count	Set Name result set
DB=USPT,PGPB,JPAB,EPAB,DWPI,TDBD; THES=ASSIGNEE; PLUR=YES; OP=AND			
L5	L2 and ((interferon adj producing) adj cell)	8	L5
L4	L2 same (CpG)	4	L4
L3	L2 and (CpG)	82	L3
L2	(IFN-?) or (IFN adj alpha)	1683	L2
L1	Hartmann-gunther.in.	7	L1

END OF SEARCH HISTORY

LANGUAGE: ENGLISH
NUMBER OF REFERENCES: 77

DRUG DESCRIPTORS:
interferon; *alpha interferon*; beta interferon; gamma interferon; interleukin 12; interleukin 18
MEDICAL DESCRIPTORS:
antineoplastic activity; nucleotide sequence; immunostimulation; lymphocyte activation; *CpG* island; cellular immunity; cancer immunotherapy; review; priority journal

5/3,K/46 (Item 5 from file: 73)
DIALOG(R)File 73:EMBASE

02622241 EMBASE No: 1984191199
Purification of human leukocyte *interferon* *alpha* by carboxymethyl controlled pore glass bead chromatography
Mecs I.; Chin D.; Fox F.; Krim M.
Interferon Laboratory, Sloan-Kettering Institue for Cancer Research, New York, NY 10021 United States
Archives of Virology (ARCH. VIROL.) (Austria) 1984, 81/3-4 (303-311)
CODEN: ARVID
DOCUMENT TYPE: Journal
LANGUAGE: ENGLISH

Purification of human leukocyte *interferon* *alpha* by carboxymethyl controlled pore glass bead chromatography

Human leukocyte-derived alpha interferon (HuIFN-alpha(Le)) has been purified and/or concentrated on Carboxymethyl derivatized Controlled Pore Glass (CML-*CPG* 240) beads. These glass beads adsorb HuIFN-alpha(Le) efficiently at acid pH and at physiological ionic strengths. Elution of HuIFN-alphag(Le) may be...
?ds

Set	Items	Description
S1	82	(CPG) AND (INTERFERON (W) ALPHA)
S2	0	S1 AND ((ENHANCED OR IMPROVED OR INCREASED) (W) EFFECTIVENESS)
S3	13	S1 AND (TREATMENT OR THERAPY)
S4	6	RD (unique items)
S5	46	RD S1 (unique items)
S6	0	S5 AND (REDUCED (W) SIDE (W) EFFECT)
S7	15	S1 AND ((IL-12) OR (IL (W) 12))
S8	4	S7 AND (INHIBITION OR INHIBITING OR SUPRESSION OR SUPPRESSING)

?logoff
19aug02 14:04:32 User259876 Session D387.2
$2.36 0.738 DialUnits File155
$5.04 24 Type(s) in Format 3
$5.04 24 Types
$7.40 Estimated cost File155
$1.19 0.404 DialUnits File159
$1.19 Estimated cost File159
$4.58 0.818 DialUnits File5
$43.75 25 Type(s) in Format 3
$43.75 25 Types
$48.33 Estimated cost File5
$9.64 1.071 DialUnits File73
$17.50 7 Type(s) in Format 3
$17.50 7 Types
$27.14 Estimated cost File73
OneSearch, 4 files, 3.030 DialUnits FileOS
$2.81 TELNET

$86.87 Estimated cost this search
$87.26 Estimated total session cost 3.129 DialUnits

Status: Signed Off. (13 minutes)

Status: Path 1 of [Dialog Information Services via Modem]

Status: Initializing TCP/IP using (UseTelnetProto 1 ServiceID pto-dialog)
Trying 31060000009999...Open

DIALOG INFORMATION SERVICES
PLEASE LOGON:
 ******** HHHHHHHH SSSSSSSS?
Status: Signing onto Dialog
 ****
ENTER PASSWORD:
 ******** HHHHHHHH SSSSSSSS? ********
Welcome to DIALOG
Status: Connected

Dialog level 02.08.05D

Last logoff: 13aug02 16:46:41
Logon file001 19aug02 13:51:40
           *** ANNOUNCEMENT ***
                    ***
--File 990 - NewsRoom now contains May 2002 to present records.
File 993 - NewsRoom archive contains 2002 records from January 2002-
April 2002. To search all 2002 records, BEGIN 990,993.
                    ***
--Alerts has been enhanced to allow a single Alert profile to be
stored and run against multiple files. Duplicate removal is available
across files and for up to 12 months. The Alert may be run according
to the file's update frequency or according to a custom
calendar-based schedule. There are no additional prices for these
enhanced features. See HELP ALERT for more information.
                    ***
--U.S. Patents Fulltext (File 654) has been redesigned with
new search and display features. See HELP NEWS 654 for
information.
                    ***
--Dialog NewsRoom is now available. BEGIN NEWSROOM
to use the files in a OneSearch. See NEW FILES RELEASED
(below) for individual file numbers.
                    ***
--Connect Time joins DialUnits as pricing
options on Dialog. See HELP CONNECT for
information.
                    ***
--CLAIMS/US Patents (Files 340,341, 942) have been enhanced
with both application and grant publication level in a
single record. See HELP NEWS 340 for information.
                    ***
--SourceOne patents are now delivered to your
email inbox as PDF replacing TIFF delivery.
See HELP SOURCE1 for more information.
                    ***
--Important news for public and academic
libraries. See HELP LIBRARY for more information.
                    ***
--Important Notice to Freelance Authors--
See HELP FREELANCE for more information
                    ***
For information about the access to file 43 please see Help News43.
***
NEW FILES RELEASED
***Dialog NewsRoom - Current 3-4 months (File 990)
***Dialog NewsRoom - 2002 Archive (File 993)
***Dialog NewsRoom - 2001 Archive (File 994)

***Dialog NewsRoom - 200[illegible]rchive (File 995)
***TRADEMARKSCAN-Finland (File 679)
***TRADEMARKSCAN-Norway (File 678)
***TRADEMARKSCAN-Sweden (File 675)
***
UPDATING RESUMED
***Delphes European Business (File 481)
***
RELOADED
***U.S. Patents Fulltext 1976-current (File 654)
***Population Demographics (File 581)
***Kompass Western Europe (File 590)
***D&B - Dun's Market Identifiers (File 516)
***CANCERLIT (File 159)
***TOXFILE (File 156)

REMOVED
***Chicago Tribune (File 632)
***Fort Lauderdale Sun Sentinel (File 497)
***The Orlando Sentinel (File 705)
***Newport News Daily Press (File 747)
***U.S. Patents Fulltext 1980-1989 (File 653)
***Washington Post (File 146)
***Books in Print (File 470)
***Court Filings (File 793)
***Microcomputer Software Guide Online (File 278)
***Publishers, Distributors & Wholesalers of the U.S. (File 450)
***State Tax Today (File 791)
***Tax Notes Today (File 790)
***Worldwide Tax Daily (File 792)

New document supplier
IMED has been changed to INFOTRIE (see HELP OINFOTRI)

>>> Enter BEGIN HOMEBASE for Dialog Announcements <<<
>>> of new databases, price changes, etc. <<<
****
KWIC is set to 50.
HILIGHT set on as '*'
*** ***

File 1:ERIC 1966-2002/Aug 08
(c) format only 2002 The Dialog Corporation

Set Items Description
--- ----- -----------
Cost is in DialUnits
?b 155, 159, 5, 73
19aug02 13:51:53 User259876 Session D387.1
$0.35 0.099 DialUnits File1
$0.35 Estimated cost File1
$0.04 TELNET
$0.39 Estimated cost this search
$0.39 Estimated total session cost 0.099 DialUnits

SYSTEM:OS - DIALOG OneSearch
File 155:MEDLINE(R) 1966-2002/Aug W2
***File 155: Alert feature enhanced for multiple files, duplicates**
removal, customized scheduling. See HELP ALERT.
File 159:Cancerlit 1975-2002/Jun
(c) format only 2002 Dialog Corporation
File 5:Biosis Previews(R) 1969-2002/Aug W2
(c) 2002 BIOSIS
***File 5: Alert feature enhanced for multiple files, duplicates**

removal, customized scheduling. See HELP ALERT.
  File 73:EMBASE 1974-2002/Aug W2
        (c) 2002 Elsevier Science B.V.
***File 73: Alert feature enhanced for multiple files, duplicates**
removal, customized scheduling. See HELP ALERT.

```
      Set  Items  Description
      ---  -----  -----------
?s (CpG) and (interferon (w) alpha)
          16679  CPG
         311529  INTERFERON
        1491870  ALPHA
          48893  INTERFERON(W)ALPHA
      S1     82  (CPG) AND (INTERFERON (W) ALPHA)
?s s1 and ((enhanced or improved or increased) (w) effectiveness)
             82  S1
         678625  ENHANCED
         588469  IMPROVED
        3166364  INCREASED
         307047  EFFECTIVENESS
           1125  ((ENHANCED OR IMPROVED) OR INCREASED)(W)EFFECTIVENESS
      S2     0  S1 AND ((ENHANCED OR IMPROVED OR INCREASED) (W)
                EFFECTIVENESS)
?s s1 and (treatment or therapy)
             82  S1
        4264224  TREATMENT
        4876657  THERAPY
      S3     13  S1 AND (TREATMENT OR THERAPY)
?rd
...completed examining records
      S4      6  RD (unique items)
?t s4/3,k/all
```

4/3,K/1 (Item 1 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

12969874 21860180 PMID: 11871495
Topical immunomodulators--progress towards treating inflammation, infection, and cancer.
Hengge U R; Benninghoff B; Ruzicka T; Goos M
Department of Dermatology and Venerology, University of Essen, Germany. ulrich.hengge@uni-essen.de
Lancet Infect Dis (United States) Oct 2001, 1 (3) p189-98, ISSN 1473-3099 Journal Code: 101130150
Document type: Journal Article; Review; Review, Tutorial
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

... sensitisers (eg, diphencyprone or dinitrochlorobenzene), newer agents of the imidazoquinoline family such as imiquimod and resiquimod act by inducing cytokine secretion from monocytes or macrophages (*interferon*-*alpha* , interleukin-12, tumour-necrosis factor-alpha). The locally generated immune milieu leads to a Th1-dominance and cell-mediated immunity that have been used clinically...

... by dendritic cells, they also act on B cells and lead to the synthesis of antibodies such as IgG2a much like the recently discovered immunostimulatory *CpG* -sequences that stimulate innate immunity. These sequences act as "danger signals" since they occur in bacterial and viral DNA, but are selectively methylated and inactivated...

... same cytokines as imidazoquinolines but they show different magnitudes and kinetics of response. Topical immunotherapy with immunostimulatory agents shows potential for effective and patient-friendly *treatment* of inflammatory, infectious, and cancerous skin diseases. Immunoenhancers such

as imdazoquinolines and pG*-sequences also have adjuva properties that could improve conventional (protein) and DNA vaccination against cancer, atopy, and allergies.

; Adjuvants, Immunologic--administration and dosage--AD; Administration, Topical; Biological Response Modifiers--immunology--IM; Biological Response Modifiers--therapeutic use--TU; Immunity, Active; Immunity, Natural; Infection--drug *therapy*--DT; Infection--immunology--IM; Inflammation--drug *therapy*--DT; Inflammation--immunology--IM; Neoplasms --drug *therapy*--DT; Neoplasms--immunology--IM; Oligodeoxyribonucleotides --immunology--IM; Oligodeoxyribonucleotides--therapeutic use--TU; Vaccines --immunology--IM

Chemical Name: Adjuvants, Immunologic; Biological Response Modifiers; *CPG*-oligonucleotide; Oligodeoxyribonucleotides; Vaccines

4/3,K/2 (Item 2 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

11303888 21347231 PMID: 11454702

Antimetastatic effect of *CpG* DNA mediated by type I IFN.

Hafner M; Zawatzky R; Hirtreiter C; Buurman W A; Echtenacher B; Hehlgans T; Mannel D N

Department of Pathology/Tumor Immunology, University of Regensburg, 93042 Regensburg, Germany.

Cancer research (United States) Jul 15 2001, 61 (14) p5523-8, ISSN 0008-5472 Journal Code: 2984705R

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

Antimetastatic effect of *CpG* DNA mediated by type I IFN.

The mechanisms involved in the antimetastatic effect of *CpG*-containing DNA were investigated in a mouse model of experimental metastasis. Tumor cell colony formation in lungs or livers of mice after i.v. inoculation with syngeneic fibrosarcoma or thymoma cells was determined. The i.v. injection of plasmid DNA or synthetic oligodeoxynucleotides (ODNs) containing unmethylated *CpG* motifs before tumor cell application strongly inhibited metastasis. Because synthetic *CpG*-ODN was not directly tumor cytotoxic, the target cells for this *CpG*-ODN effect were determined. The cytotoxic activity on standard natural killer (NK) targets as well as on fibrosarcoma cells of splenic NK cells and NKT cell-containing liver mononuclear cells derived from *CpG* -ODN-treated mice was strongly enhanced. Participation of NK/NKT cells in the *CpG*-induced antimetastatic effect was demonstrated by reduction of the antimetastatic effect in mice depleted of NK/NKT cells and beta2-microglobulin-deficient mice. Neutralization of interleukin 12, interleukin 18, or IFN-gamma did not interfere with the *CpG*-induced antimetastatic effect. However, in sera of *CpG* -ODN-treated mice, high levels of IFN-alpha were detected, and in IFN-alpha/beta receptor-deficient mice, the *CpG* -ODN-induced antimetastatic effect was strongly reduced. These data indicate that *CpG* -ODNs activate NK/NKT cells for antimetastatic activity indirectly via IFN-alpha/beta receptor activation. The exploitation of the stimulatory activity of *CpG* -ODN for the innate immune system might be a useful strategy for antimetastatic *therapy*.

Descriptors: *CpG* Islands--genetics--GE; *DNA--administration and dosage --AD; *Interferon Type I--physiology--PH; *Neoplasm Metastasis--prevention and control--PC...; pharmacology--PD; Cytokines--immunology--IM; Cytokines --physiology--PH; Cytotoxicity Tests, Immunologic; DNA--metabolism--ME; DNA Methylation; Dose-Response Relationship, Drug; Interferon Type I --immunology--IM; *Interferon*-*alpha*--immunology--IM; *Interferon*-*alpha*--physiology--PH; Killer Cells, Natural--immunology--IM; Killer Cells, Natural--physiology--PH; Mice; Mice, Inbred C3H; Mice, Inbred C57BL; Mice, Inbred DBA; Mice, Inbred Strains...

Chemical Name: Antibodies, Monoclonal; Cytokines; Interferon Type I; *Interferon*-*alpha*; DNA

4/3,K/3 (Item 3 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

10937640 20493557 PMID: 10924517
Regulation of the promoter activity of interferon regulatory factor-7 gene. Activation by interferon snd silencing by hypermethylation.
Lu R; Au W C; Yeow W S; Hageman N; Pitha P M
Oncology Center and Department of Molecular Biology and Genetics, The Johns Hopkins University School of Medicine, Baltimore, Maryland 21231, USA.
Journal of biological chemistry (UNITED STATES) Oct 13 2000, 275 (41) p31805-12, ISSN 0021-9258 Journal Code: 2985121R
Contract/Grant No.: R01 AI19737-17; AI; NIAID
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

... cells. We have further shown that the previously observed lack of expression of IRF-7 in 2fTGH fibrosarcoma cell line, correlated with hypermethylation of the *CpG* island in the human IRF-7 promoter. The repression of the promoter activity was relieved by *treatment* with DNA methyltransferase inhibitor 5-aza-deoxycytidine. In vitro methylation of IRF-7 promoter silenced IRF-7 directed expression of luciferase gene in HeLa cells...
Descriptors: DNA Methylation--drug effects--DE; *DNA-Binding Proteins --genetics--GE; *Gene Silencing--drug effects--DE; **Interferon*-*alpha* --pharmacology--PD; *Promoter Regions (Genetics)--genetics--GE; *Trans-Activation (Genetics)--drug effects--DE; Azacitidine--analogs and derivatives--AA; Azacitidine--pharmacology--PD; Base Sequence; Cloning, Molecular; *CpG* Islands--genetics--GE; DNA--genetics--GE; DNA--metabolism --ME; DNA-Binding Proteins--metabolism--ME; Introns--genetics--GE; Molecular Sequence Data; Mutation--genetics--GE; Oligodeoxyribonucleotides --genetics...
Chemical Name: DNA-Binding Proteins; IRF-7 protein; *Interferon*-*alpha*; Oligodeoxyribonucleotides; Transcription Factors; interferon-stimulated gene factor 3; 5-aza-2'-deoxycytidine; Azacitidine; DNA

4/3,K/4 (Item 4 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

08946693 96279653 PMID: 8662521
Immunostimulatory DNA sequences necessary for effective intradermal gene immunization.
Sato Y; Roman M; Tighe H; Lee D; Corr M; Nguyen M D; Silverman G J; Lotz M; Carson D A; Raz E
Department of Medicine and The Sam and Rose Stein Institute for Research on Aging, University of California, San Diego, 9500 Gilman Drive, La Jolla, CA 92093-0663, USA.
Science (UNITED STATES) Jul 19 1996, 273 (5273) p352-4, ISSN 0036-8075 Journal Code: 0404511
Contract/Grant No.: AI36214; AI; NIAID; AI37305; AI; NIAID; AR41897; AR; NIAMS; +
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

... not necessarily induce immune responses to the encoded antigens. Instead, the immunogenicity of plasmid DNA (pDNA) requires short immunostimulatory DNA sequences (ISS) that contain a *CpG* dinucleotide in a particular base context. Human monocytes transfected with pDNA or double-stranded oligonucleotides containing the ISS, but not those

transfected with ISS-deficient pDNA or oligonucleotides, transcribed large amounts of *interferon*-*alpha* , interferon-beta, and interleukin-12. Although ISS are necessary for gene vaccination, they down-regulate gene expression and thus may interfere with gene replacement *therapy* by inducing proinflammatory cytokines.
; Amino Acid Sequence; Base Sequence; *CpG* Islands; DNA--chemistry--CH; DNA--genetics--GE; Gene Expression Regulation; Genetic Vectors; Injections, Intradermal; Interferons--biosynthesis--BI; Interleukin-12 --biosynthesis--BI; Mice; Mice, Inbred BALB...

4/3,K/5 (Item 1 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

13724996 BIOSIS NO.: 200200353817
Novel and cell-specific activities of ISS (immunostimulatory sequence) ODNs in human preDC2s and B cells.
AUTHOR: Marshall Jason D(a); Subramanian Sandhya(a); Abbate Christi(a); Van Nest Gary(a)
AUTHOR ADDRESS: (a)Preclinical, Dynavax Technologies Corp., 717 Potter St., Ste. 100, Berkeley, CA, 94710**USA
JOURNAL: FASEB Journal 16 (4):pA321-A322 March 20, 2002
MEDIUM: print
CONFERENCE/MEETING: Annual Meeting of the Professional Research Scientists on Experimental Biology New Orleans, Louisiana, USA April 20-24, 2002
ISSN: 0892-6638
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: We have defined a number of ISS (immunostimulatory sequence) ODNs containing *CpG* motifs that exhibit differential potencies in their induction of IFN-gamma or IFN-alpha from human PBMCs. To further characterize their activity, we examined highly...

...inducible genes 2',5'-oligoadenylate synthetase, interferon-stimulated gene 54K, and guanylate-binding protein-1, which have been described as elevated in patients undergoing therapeutic *treatment* with Type I interferon. The increased expression for these genes was observed by 2 h after ISS stimulation and remained high through 24 h. Additionally...
DESCRIPTORS:
CHEMICALS & BIOCHEMICALS: ...IFN-alpha {*interferon*-*alpha*}; ...

...*CpG* motif, immunostimulatory sequence

4/3,K/6 (Item 1 from file: 73)
DIALOG(R)File 73:EMBASE

11566015 EMBASE No: 2002137447
Topical immunmodulation in dermatology
TOPISCHE IMMUNMODULATION IN DER DERMATOLOGIE
Hengge U.R.
Dr. U.R. Hengge, Klin. und Poliklin. fur Dermatol., Venerol./Allergol. Univ. Klin. Essen, Hufelandstr. 55, 45122 Essen Germany
AUTHOR EMAIL: ulrich.hengge@uni-essen.de
H+G Zeitschrift fur Hautkrankheiten (H G Z. HAUTKR.) (Germany) 2002, 77/3 (116-130)
CODEN: ZHKRA ISSN: 0301-0481
DOCUMENT TYPE: Journal ; Review
LANGUAGE: GERMAN SUMMARY LANGUAGE: ENGLISH; GERMAN
NUMBER OF REFERENCES: 133

Immunomodulators include both immunostimulatory and immunosuppressive agents. If successful, topical immunotherapy may represent an important

improvement in the *therapy* of inflammatory dermatoses, viral infections and cancers of the skin and genital mucosa. This rather old concept has emerged some 100 years ago, but only...

...g. common warts) and autoimmune diseases (e.g. alopecia areata). Newer agents such as imidazoquinolines (imiquimod and resiquimod) act by cytokine secretion from monocytes/macrophages (*interferon*-*alpha*, interleukin-12, tumour-necrosis factor-alpha). The locally generated immune milieu leads to a ThSUB1-dominance and cell-mediated immunity that have been clinically used...

...presentation by dendritic cells, they also act on B-cells leading to the synthesis of antibodies such as IgGSUB2a much like the recently discovered immunostimulatory *CpG* sequences that stimulate innate immunity. These sequences act as "danger signals" as they occur in bacterial and viral DNA but are selectively methylated and inactivated...

...they display different magnitudes and kinetics of the response. On the other hand, the topical immunosuppressive tacrolimus has been used with great success in the *treatment* of chronic inflammatory diseases such as atopic dermatitis in children and adults. Topical immunotherapy with both immunostimulatory and immunosuppressive agents bears potential for effective and patient-friendly *treatment* of inflammatory, infectious and cancerous skin diseases. Due to their adjuvant properties immunoenhancers may also improve conventional (protein) and DNA vaccination against cancer, atopy and...

DRUG DESCRIPTORS:

*immunomodulating agent--drug administration--ad; *immunomodulating agent --drug *therapy*--dt; *immunomodulating agent--pharmacology--pd; * immunomodulating agent--topical drug administration--tp; *immunostimulating agent--drug administration--ad; *immunostimulating agent--drug *therapy* --dt; *immunostimulating agent--pharmacology--pd; *immunostimulating agent --topical drug administration--tp; *immunosuppressive agent--drug administration--ad; *immunosuppressive agent--drug *therapy*--dt; * immunosuppressive agent--pharmacology--pd; *immunosuppressive agent --topical drug administration--tp
diphencyprone--drug administration--ad; diphencyprone--drug *therapy*--dt; diphencyprone--pharmacology--pd; diphencyprone--topical drug administration --tp; 1 chloro 2,4 dinitrobenzene--drug administration--ad; 1 chloro 2,4 dinitrobenzene--drug *therapy*--dt; 1 chloro 2,4 dinitrobenzene --pharmacology--pd; 1 chloro 2,4 dinitrobenzene--topical drug administration--tp; imiquimod--drug administration--ad; imiquimod--drug *therapy*--dt; imiquimod--pharmacology--pd; imiquimod--topical drug administration--tp; resiquimod--drug administration--ad; resiquimod--drug dose--do; resiquimod--drug *therapy*--dt; resiquimod--pharmacology--pd; resiquimod--topical drug administration--tp; cytokine--endogenous compound --ec; alpha interferon--endogenous compound--ec; interleukin 12--endogenous compound--ec; tumor necrosis factor alpha--endogenous compound--ec; virus DNA; bacterial DNA; tsukubaenolide--drug administration--ad; tsukubaenolide --drug *therapy*--dt; tsukubaenolide--topical drug administration--tp; ascomycin--drug administration--ad; ascomycin--drug *therapy*--dt; ascomycin--pharmaceutics--pr; ascomycin--pharmacokinetics--pk; ascomycin --topical drug administration--tp; BCG vaccine--drug administration--ad; BCG vaccine--drug *therapy*--dt; BCG vaccine--topical drug administration --tp; thymus peptide--drug administration--ad; thymus peptide--drug *therapy*--dt; thymus peptide--topical drug administration--tp; interferon --drug administration--ad; interferon--drug *therapy*--dt; interferon --topical drug administration--tp; squaric acid dibutyl ester--drug administration--ad; squaric acid dibutyl ester--drug *therapy*--dt; squaric acid dibutyl ester--topical drug administration--tp; immunoglobulin G antibody--endogenous compound--ec; antigen; CD8 antigen--endogenous compound--ec; messenger RNA--endogenous compound--ec; imidazoquinoline derivative--clinical trial--ct; imidazoquinoline derivative--drug administration--ad; imidazoquinoline derivative--drug *therapy*--dt; imidazoquinoline derivative--pharmacology--pd; imidazoquinoline derivative --topical drug administration--tp; podophyllin--drug *therapy*--dt;

podophyllin--pharmacoecon[illegible]cs--pe; oligodeoxynucleotide--[illegible]g *therapy*
--dt; oligodeoxynucleotide--pharmacology--pd; cyclosporin--drug
administration--ad; cyclosporin--drug *therapy*--dt; cyclosporin--topical
drug administration--tp; chloroquine--drug *therapy*--dt; calcineurin
--endogenous compound--ec; unindexed drug; pimecrolimus
MEDICAL DESCRIPTORS:
immunomodulation; immunotherapy; skin disease--disease management--dm; skin
disease--drug *therapy*--dt; cellular immunity; immune response; verruca
vulgaris--drug *therapy*--dt; autoimmune disease--drug *therapy*--dt;
cytokine release; skin cancer--drug *therapy*--dt; skin inflammation--drug
therapy--dt; virus infection--drug *therapy*--dt; dendritic cell; B
lymphocyte; cryotherapy; drug efficacy; molluscum contagiosum--drug
therapy--dt; epithelium tumor--drug *therapy*--dt; herpes simplex--drug
therapy--dt; human; clinical trial; review
?ds

```
Set     Items   Description
S1         82   (CPG) AND (INTERFERON (W) ALPHA)
S2          0   S1 AND ((ENHANCED OR IMPROVED OR INCREASED) (W) EFFECTIVEN-
              ESS)
S3         13   S1 AND (TREATMENT OR THERAPY)
S4          6   RD (unique items)
?rd s1
...examined 50 records  (50)
...completed examining records
      S5      46  RD S1 (unique items)
?s s5 and (reduced (w) side (w) effect)
            46  S5
       1566111  REDUCED
        806252  SIDE
       4183933  EFFECT
            73  REDUCED(W)SIDE(W)EFFECT
      S6     0  S5 AND (REDUCED (W) SIDE (W) EFFECT)
?s s1 and ((IL-12) or (IL (w) 12))
            82  S1
           270  IL-12
        368831  IL
       1956388  12
         22285  IL(W)12
      S7      15  S1 AND ((IL-12) OR (IL (W) 12))
?s s7 and (inhibition or inhibiting or supression or suppressing)
            15  S7
       1239382  INHIBITION
        157925  INHIBITING
           644  SUPRESSION
         36573  SUPPRESSING
      S8       4  S7 AND (INHIBITION OR INHIBITING OR SUPRESSION OR
                  SUPPRESSING)
?t s8/3,k/all
```

8/3,K/1 (Item 1 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

13318938 22085803 PMID: 12091326

Characterization of a new subpopulation of mouse CD8alpha(+) B220(+) dendritic cells endowed with type 1 interferon production capacity and tolerogenic potential.

Martin Pilar; Del Hoyo Gloria Martinez; Anjuere Fabienne; Arias Cristina Fernandez; Vargas Hector Hernandez; Fernandez-L Africa; Parrillas Veronica; Ardavin Carlos

Department of Cell Biology, Faculty of Biology, Complutense University, Madrid, Spain; and Faculte de Medecine Pasteur, INSERM U364, Nice, France.

Blood (United States) Jul 15 2002, 100 (2) p383-90, ISSN 0006-4971 Journal Code: 7603509

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner:
Record type: In Process

... potential, located in the thymus, bone marrow, spleen, and lymph nodes. B220(+) DCs display ultrastructural characteristics resembling those of human plasmacytoid cells and accordingly produce *interferon*-*alpha* after virus stimulation. B220(+) DCs acquired a strong antigen-presenting cell capacity on incubation with *CpG* oligodeoxynucleotides, concomitant with a remarkable up-regulation of MHC and costimulatory molecules and the production of interleukin-12 (*IL*-*12*) and IL-10. Importantly, our data suggest that nonstimulated B220(+) DCs represent a subset of physiological tolerogenic DCs endowed with the capacity to induce a nonanergic state of T-cell unresponsiveness, involving the differentiation of T regulatory cells capable of *suppressing* antigen-specific T-cell proliferation. In conclusion, our data support the hypothesis that B220(+) DCs represent a lymphoid organ subset of immature DCs with a...

8/3,K/2 (Item 1 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

13778595 BIOSIS NO.: 200200407416
Characterization of a new subpopulation of mouse CD8alpha+ B220+ dendritic cells endowed with type 1 interferon production capacity and tolerogenic potential.
AUTHOR: Martin Pilar; Martinez del Hoyo Gloria; Anjuere Fabienne; Fernandez Arias Cristina; Hernandez Vargas Hector; Fernandez-L Africa; Parrillas Veronica; Ardavin Carlos(a)
AUTHOR ADDRESS: (a)Department of Cell Biology, Faculty of Biology, Complutense University, 28040, Madrid**Spain E-Mail: ardavin@bio.ucm.es
JOURNAL: Blood 100 (2):p383-390 July 15, 2002
MEDIUM: print
ISSN: 0006-4971
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

...ABSTRACT: potential, located in the thymus, bone marrow, spleen, and lymph nodes. B220+ DCs display ultrastructural characteristics resembling those of human plasmacytoid cells and accordingly produce *interferon*-*alpha* after virus stimulation. B220+ DCs acquired a strong antigen-presenting cell capacity on incubation with *CpG* oligodeoxynucleotides, concomitant with a remarkable up-regulation of MHC and costimulatory molecules and the production of interleukin-12 (*IL*-*12*) and IL-10. Importantly, our data suggest that nonstimulated B220+ DCs represent a subset of physiological tolerogenic DCs endowed with the capacity to induce a nonanergic state of T-cell unresponsiveness, involving the differentiation of T regulatory cells capable of *suppressing* antigen-specific T-cell proliferation. In conclusion, our data support the hypothesis that B220+ DCs represent a lymphoid organ subset of immature DCs with a...
DESCRIPTORS:
CHEMICALS & BIOCHEMICALS: *CpG* oligodeoxynucleotides...

...interleukin-12 {*IL*-*12*};

8/3,K/3 (Item 2 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

12746200 BIOSIS NO.: 200000499823
Adjuvant activities of immune response modifier R-848: Comparison with *CpG* ODN.
AUTHOR: Vasilakos John P(a); Smith Rose M A(a); Gibson Sheila J(a); Lindh

Jana M(a); Pederson Lin[redacted]K(a); Reiter Michael J(a); Smi[redacted]Michael H; Tomai Mark A(a)
AUTHOR ADDRESS: (a)Department of Pharmacology, 3M Center, 3M Pharmaceuticals, Saint Paul, MN, 55144**USA
JOURNAL: Cellular Immunology 204 (1):p64-74 August 25, 2000
MEDIUM: print
ISSN: 0008-8749
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English
SUMMARY LANGUAGE: English

Adjuvant activities of immune response modifier R-848: Comparison with *CpG* ODN.

ABSTRACT: R-848 and imiquimod belong to a class of immune response modifiers that are potent inducers of cytokines, including IFN-alpha, TNF-alpha, *IL*-*12*, and IFN-gamma. Many of these cytokines can affect the acquired immune response. This study examines the effects of R-848 on aspects of acquired immunity, including immunoglobulin secretion, in vivo cytokine production, and Ag-specific T cell cytokine production. Results are compared with those of Th1 *CpG* ODN. R-848 and *CpG* ODN are effective at skewing immunity in the presence of Alum toward a Th1 Ab response (IgG2a) and away from a Th2 Ab response (IgE). R-848 and *CpG* ODN are also capable of initiating an immune response in the absence of additional adjuvant by specifically enhancing IgG2a levels. Both R-848 and imiquimod showed activity when given subcutaneously or orally, indicating that the compound mechanism was not through generation of a depot effect. Although *CpG* ODN behaves similarly to R-848, *CpG* ODN has a distinct cytokine profile, is more effective than R-848 when given with Alum in the priming dose, and is active only when...

...The mechanism of R-848's adjuvant activity is linked to cytokine production, where increases in IgG2a levels are associated with IFN-alpha, TNF-alpha, *IL*-*12*, and IFN-gamma induction, and decreases in IgE levels are associated with IFN-alpha and TNF-alpha. Imiquimod also enhances IgG2a production when given with Ag. The above results suggest that the imidazoquinolines R-848 and imiquimod may be attractive compounds for use as vaccine adjuvants and in *inhibiting* pathological responses mediated by Th2 cytokines.
DESCRIPTORS:
CHEMICALS & BIOCHEMICALS: *CpG* ODN...

...IFN-alpha {*interferon*-*alpha*}; ...

...*IL*-*12* {interleukin-12

8/3,K/4 (Item 1 from file: 73)
DIALOG(R)File 73:EMBASE

11690326 EMBASE No: 2002252968
Characterization of a new subpopulation of mouse CD8alphaSUP+ B220SUP+ dendritic cells endowed with type 1 interferon production capacity and tolerogenic potential
Martin P.; Del Hoyo G.M.; Anjuere F.; Fernandez Arias C.; Hernandez Vargas H.; Fernandez-L A.; Parrillas V.; Ardavin C.
C. Ardavin, Department of Cell Biology, Faculty of Biology, Complutense University, 28040 Madrid Spain
AUTHOR EMAIL: ardavin@bio.ucm.es
Blood (BLOOD) (United States) 15 JUL 2002, 100/2 (383-390)
CODEN: BLOOA ISSN: 0006-4971
DOCUMENT TYPE: Journal ; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH
NUMBER OF REFERENCES: 38

...potential, located in the thymus, bone marrow, spleen, and lymph nodes. B220SUP+ DCs display ultrastructural characteristics resembling those of human plasmacytoid cells and accordingly produce *interferon*-*alpha* after virus stimulation. B220SUP+ DCs acquired a strong antigen-presenting cell capacity on incubation with *CpG* oligodeoxynucleotides, concomitant with a remarkable up-regulation of MHC and costimulatory molecules and the production of interleukin-12 (*IL*-*12*) and IL-10. Importantly, our data suggest that nonstimulated B220SUP+ DCs represent a subset of physiological tolerogenic DCs endowed with the capacity to induce a nonanergic state of T-cell unresponsiveness, involving the differentiation of T regulatory cells capable of *suppressing* antigen-specific T-cell proliferation. In conclusion, our data support the hypothesis that B220SUP+ DCs represent a lymphoid organ subset of immature DCs with a...
MEDICAL DESCRIPTORS:
cell maturation; major histocompatibility complex; T lymphocyte activation; thymus; bone marrow; spleen; lymph node; cell ultrastructure; antigen presenting cell; *CpG* island; lymphocyte differentiation; lymphocyte proliferation; nonhuman; mouse; controlled study; animal tissue; animal cell; article; priority journal
?ds

Set	Items	Description
S1	82	(CPG) AND (INTERFERON (W) ALPHA)
S2	0	S1 AND ((ENHANCED OR IMPROVED OR INCREASED) (W) EFFECTIVENESS)
S3	13	S1 AND (TREATMENT OR THERAPY)
S4	6	RD (unique items)
S5	46	RD S1 (unique items)
S6	0	S5 AND (REDUCED (W) SIDE (W) EFFECT)
S7	15	S1 AND ((IL-12) OR (IL (W) 12))
S8	4	S7 AND (INHIBITION OR INHIBITING OR SUPRESSION OR SUPPRESSING)

?t s5/3,k/all

5/3,K/1 (Item 1 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

13318938 22085803 PMID: 12091326
Characterization of a new subpopulation of mouse CD8alpha(+) B220(+) dendritic cells endowed with type 1 interferon production capacity and tolerogenic potential.
Martin Pilar; Del Hoyo Gloria Martinez; Anjuere Fabienne; Arias Cristina Fernandez; Vargas Hector Hernandez; Fernandez-L Africa; Parrillas Veronica; Ardavin Carlos
Department of Cell Biology, Faculty of Biology, Complutense University, Madrid, Spain; and Faculte de Medecine Pasteur, INSERM U364, Nice, France.
Blood (United States) Jul 15 2002, 100 (2) p383-90, ISSN 0006-4971 Journal Code: 7603509
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: In Process

... potential, located in the thymus, bone marrow, spleen, and lymph nodes. B220(+) DCs display ultrastructural characteristics resembling those of human plasmacytoid cells and accordingly produce *interferon*-*alpha* after virus stimulation. B220(+) DCs acquired a strong antigen-presenting cell capacity on incubation with *CpG* oligodeoxynucleotides, concomitant with a remarkable up-regulation of MHC and costimulatory molecules and the production of interleukin-12 (IL-12) and IL-10. Importantly, our...

5/3,K/2 (Item 2 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

13027684 21898986 PMID: 11902329

Importance of *CpG* dinucleotides in activation of natural IFN-alpha-producing cells by a lupus-related oligodeoxynucleotide.

Magnusson M; Magnusson S; Vallin H; Ronnblom L; Alm G V

Department of Veterinary Microbiology, Swedish University of Agricultural Sciences, Uppsala. Mattias.Magnusson@vmm.slu.se

Scandinavian journal of immunology (England) Dec 2001, 54 (6) p543-50, ISSN 0300-9475 Journal Code: 0323767

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

Importance of *CpG* dinucleotides in activation of natural IFN-alpha-producing cells by a lupus-related oligodeoxynucleotide.

... the IFN-alpha-producing cells (IPC) were the natural IPC, also termed type 2 dendritic cell precursors (pDC2) or plasmacytoid monocytes. The importance of unmethylated *CpG* dinucleotides for the interferogenic activity of ODN was studied. Methylation of *CpG* impaired the activity of single-stranded (ss) ODN H, but increased that of the complementary ssODN I. Furthermore, *CpG*-methylated double-stranded (ds) ODN Hmet-Imet lost, but hemimethylated dsODN H-Imet retained interferogenic activity. Inversion of the *CpG* to GpC had no effect on the interferogenic activity of ssODN H, increased that of ssODN I, however abolished the activity of dsODN H-I. Alteration of the *CpG* in ODN H to ApG and in the ODN I to CpT destroyed their activity. The induction of IFN-alpha is therefore sequence-specific, but...

Descriptors: *CpG* Islands; **Interferon*-*alpha*--biosynthesis--BI; *Lupus Erythematosus, Systemic--genetics--GE; *Lupus Erythematosus, Systemic--immunology--IM; *Oligodeoxyribonucleotides--pharmacology--PD

Chemical Name: Antigens; Autoantigens; Interferon Inducers; *Interferon*-*alpha*; Oligodeoxyribonucleotides; Phosphatidylethanolamines; 1,2-dielaidoylphosphatidylethanolamine

5/3,K/3 (Item 3 from file: 155)

DIALOG(R)File 155:MEDLINE(R)

12969874 21860180 PMID: 11871495

Topical immunomodulators--progress towards treating inflammation, infection, and cancer.

Hengge U R; Benninghoff B; Ruzicka T; Goos M

Department of Dermatology and Venerology, University of Essen, Germany. ulrich.hengge@uni-essen.de

Lancet Infect Dis (United States) Oct 2001, 1 (3) p189-98, ISSN 1473-3099 Journal Code: 101130150

Document type: Journal Article; Review; Review, Tutorial

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

... sensitisers (eg, diphencyprone or dinitrochlorobenzene), newer agents of the imidazoquinoline family such as imiquimod and resiquimod act by inducing cytokine secretion from monocytes or macrophages (*interferon*-*alpha* , interleukin-12, tumour-necrosis factor-alpha). The locally generated immune milieu leads to a Th1-dominance and cell-mediated immunity that have been used clinically...

... by dendritic cells, they also act on B cells and lead to the synthesis of antibodies such as IgG2a much like the recently discovered immunostimulatory *CpG* -sequences that stimulate innate immunity. These sequences act as "danger signals" since they occur in bacterial and viral DNA, but are selectively methylated and inactivated...

... Topical immunotherapy with immunostimulatory agents shows potential for

effective and patient-friendly treatment of inflammatory, infectious, and cancerous skin diseases. Immunoenhancers such as imdazoquinolines and *CpG* -sequences also have adjuvant properties that could improve conventional (protein) and DNA vaccination against cancer, atopy, and allergies.
Chemical Name: Adjuvants, Immunologic; Biological Response Modifiers; *CPG*-oligonucleotide; Oligodeoxyribonucleotides; Vaccines

5/3,K/4 (Item 4 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

12769971 21610621 PMID: 11745372
Distinct *CpG* oligonucleotide sequences activate human gamma delta T cells via *interferon*-*alpha*/-beta.
Rothenfusser S; Hornung V; Krug A; Towarowski A; Krieg A M; Endres S; Hartmann G
Department of Internal Medicine, Division of Clinical Pharmacology, University of Munich, Munich, Germany.
European journal of immunology (Germany) Dec 2001, 31 (12) p3525-34, ISSN 0014-2980 Journal Code: 1273201
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

Distinct *CpG* oligonucleotide sequences activate human gamma delta T cells via *interferon*-*alpha*/-beta.
Oligodeoxynucleotides with *CpG* motifs (*CpG* ODN) mimic microbial DNA and activate effectors of innate immunity including NK cells. Human gamma delta T cells (Vgamma9/Vdelta2) are antigen specific "natural memory" T cells in a preactivated stage, which respond to common non-protein phosphoantigens. Among several *CpG* ODN tested, distinct *CpG* ODN sequences characterized by inducing high amounts of IFN-alpha/-beta in PBMC elicited strong gamma delta T cell and NK cell responses, as determined by CD69 expression, IFN-gamma production, perforin content and lytic activity. These *CpG* ODN activated gamma delta T cells and NK cells in the absence of an additional stimulus and synergistically increased responsiveness to cell-type-specific antigens...

... T cells and NK-sensitive tumor cells for NK cells. NK cells and gamma delta T cells were activated via IFN-alpha/-beta released by *CpG* ODN-stimulated PBMC. Purified gamma delta T cells and NK cells did not respond to *CpG* ODN but to recombinant IFN-alpha/-beta. In conclusion, *CpG* ODN sequences were identified which, based on their ability to induce high amounts of IFN-alpha/-beta, represent strong adjuvants for "natural memory" cells including...

... non-protein antigens. Early IFN-alpha/-beta dependent stimulation of IFN-gamma synthesis in NK cells and gamma delta T cells may contribute to the *CpG* ODN-induced Th1 bias of an evolving immune response.
Descriptors: Adjuvants, Immunologic--pharmacology--PD; **Interferon*-*alpha*--physiology--PH; *Interferon-beta--physiology--PH; *Lymphocyte Transformation--drug effects--DE; *Oligodeoxyribonucleotides--pharmacology --PD; *Receptors, Antigen, T-Cell, gamma-delta--physiology--PH; *T-Lymphocytes--drug...
Chemical Name: Adjuvants, Immunologic; *CPG*-oligonucleotide; Cytokines; *Interferon*-*alpha*; Membrane Glycoproteins; Oligodeoxyribonucleotides; Receptors, Antigen, T-Cell, gamma-delta; perforin; Interferon-beta; Interferon Type II

5/3,K/5 (Item 5 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

12662553 21582115 PMID: 11713464
Mouse type I IFN-producing cells are immature APCs with plasmacytoid

morphology.
Asselin-Paturel C; Boonstra A; Dalod M; Durand I; Yessaad N; Dezutter-Dambuyant C; Vicari A; O'Garra A; Biron C; Briere F; Trinchieri G
Schering-Plough, Laboratory for Immunological Research, Dardilly, France.
Nature immunology (United States) Dec 2001, 2 (12) p1144-50, ISSN 1529-2908 Journal Code: 100941354
Contract/Grant No.: CA41268; CA; NCI
Comment in Nat Immunol. 2001 Dec;2(12) 1098-100; Comment in PMID 11725298
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

We show here that mouse *interferon*-*alpha* (IFN-alpha)-producing cells (mIPCs) are a unique subset of immature antigen-presenting cells (APCs) that secrete IFN-alpha upon stimulation with viruses. mIPCs have...

... unlike other dendritic cell subsets, however, they do not express CD8alpha or CD11b. Although mIPCs undergo apoptosis in vitro, stimulation with viruses, IFN-alpha or *CpG* oligonucleotides enhanced their survival and T cell stimulatory activity. In vivo, mIPCs were the main producers of IFN-alpha in cytomegalovirus-infected mice, as depletion of Ly6G+/C+ cells abrogated IFN-alpha production. mIPCs produced interleukin 12 (IL-12) in response to viruses and *CpG* oligodeoxynucleotides, but not bacterial products. Although different pathogens can selectively engage various APC subsets for IL-12 production, IFN-alpha production is restricted to mIPCs ...
Descriptors: Antigen-Presenting Cells--immunology--IM; *Antigen-Presenting Cells--ultrastructure--UL; **Interferon*-*alpha*--biosynthesis--BI; Antigen-Presenting Cells--classification--CL; Bone Marrow Cells--immunology--IM; Cell Differentiation; Cell Survival; Cells, Cultured; Herpesviridae Infections--immunology--IM; Immunophenotyping; *Interferon*-*alpha*--pharmacology--PD; Interleukin-12--biosynthesis--BI; Lymphocyte Transformation; Mice; Mice, Inbred BALB C; Mice, Inbred C57BL; Muromegalovirus--physiology--PH; Oligodeoxyribonucleotides--pharmacology--PD; Orthomyxoviridae--physiology--PH...
Chemical Name: *CPG*-oligonucleotide; *Interferon*-*alpha*; Oligodeoxyribonucleotides; Interleukin-12

5/3,K/6 (Item 6 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

12579602 21488506 PMID: 11602645
CD11c(+)B220(+)Gr-1(+) cells in mouse lymph nodes and spleen display characteristics of plasmacytoid dendritic cells.
Nakano H; Yanagita M; Gunn M D
Department of Medicine and Division of Cardiology, Duke University Medical Center, Durham, NC 27710, USA.
Journal of experimental medicine (United States) Oct 15 2001, 194 (8) p1171-8, ISSN 0022-1007 Journal Code: 2985109R
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

Human plasmacytoid dendritic cells (pDCs) are major producers of IFNalpha, are activated by *CpG* motifs, and are believed to enter lymph nodes (LNs) via L-selectin dependent extravasation across high endothelial venules. To identify a similar murine DC type...

... levels, display a plasmacytoid morphology, and survive poorly in culture. Their survival is increased and they develop a DC-like morphology in interleukin 3 and *CpG* . Like human pDCs, CD11c(+)Gr-1(+) cells stimulate T cell proliferation after activation with *CpG* and produce IFNalpha after stimulation with influenza virus. These cells also display a

strain-specific variation in frequency, being fivefold increased in the LNs of...
; Biological Markers; Cell Differentiation; Cell Survival--drug effects --DE; Cells, Cultured; *CpG* Islands--immunology--IM; Dendritic Cells --cytology--CY; Dendritic Cells--drug effects--DE; Dendritic Cells --immunology--IM; Granulocyte-Macrophage Colony-Stimulating Factor --pharmacology--PD; Hematopoietic Stem Cells--cytology--CY; Hematopoietic Stem Cells--drug effects--DE; Hematopoietic Stem Cells--immunology--IM; *Interferon*-*alpha*--biosynthesis--BI; Interleukin-3--pharmacology--PD; L-Selectin--genetics--GE; L-Selectin--immunology--IM; Mice; Mice, Inbred BALB C; Mice, Inbred C57BL; Mice, Inbred DBA...
Chemical Name: Antigens, CD45; Biological Markers; Complement 4-Binding Protein; *Interferon*-*alpha*; Interleukin-3; L-Selectin; Granulocyte-Macro phage Colony-Stimulating Factor

5/3,K/7 (Item 7 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

12548448 21443864 PMID: 11559440
Type I interferon is the primary regulator of inducible Ly-6C expression on T cells.
Schlueter A J; Krieg A M; de Vries P; Li X
Department of Pathology, University of Iowa College of Medicine, Iowa City, IA 52242-1181, USA. annette-schlueter@uiowa.edu
Journal of interferon & cytokine research : the official journal of the International Society for Interferon and Cytokine Research (United States)
Aug 2001, 21 (8) p621-9, ISSN 1079-9907 Journal Code: 9507088
Contract/Grant No.: R01 AI31265; AI; NIAID; T32 HL07344-19; HL; NHLBI
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

... roles of proinflammatory cytokines and TCR engagement in Ly-6C induction. In vitro experiments tested the effects of cytokines on Ly-6C expression and confirmed *interferon*-*alpha* (IFN-alpha) as a primary cytokine that induces Ly-6C expression on CD4+ and CD8+ T cells. The amount and duration of Ly-6C expression were examined on T cells after in vivo induction of proinflammatory cytokines (*CpG* oligodeoxynucleotides [ODN]) or TCR activation (staphylococcal enterotoxin B [SEB]). In vivo, proinflammatory cytokines transiently upregulated Ly-6C on T cells in the absence of TCR...

... cause long-term upregulation of Ly-6C expression in either population. IFN-alpha was confirmed as a primary inducer of Ly-6C in vivo, as *CpG* ODN were unable to induce Ly-6C expression in IFN-alphaRI(-/-) mice. Thus, inducible Ly-6C expression on CD4+ and CD8+ T cells is largely...
...; Positive T-Lymphocytes--immunology--IM; CD4-Positive T-Lymphocytes --metabolism--ME; CD8-Positive T-Lymphocytes--immunology--IM; CD8-Positive T-Lymphocytes--metabolism--ME; Cells, Cultured; *CpG* Islands--immunology --IM; Enterotoxins--pharmacology--PD; Gene Expression Regulation --immunology--IM; Interferon Type II--deficiency--DF; Interferon Type II --genetics--GE; *Interferon*-*alpha*--pharmacology--PD; Mice; Mice, Inbred BALB C; Mice, Inbred DBA; Mice, Knockout; Oligodeoxyribonucleotides --administration and dosage--AD; Receptors, Interferon--deficiency--DF; Receptors, Interferon--genetics--GE...
Chemical Name: Antigens, Ly; *CPG*-oligonucleotide; Enterotoxins; Interferon Type I; *Interferon*-*alpha*; Oligodeoxyribonucleotides; Receptors, Interferon; *interferon* *alpha* receptor; enterotoxin B, staphylococcal; Interferon Type II

5/3,K/8 (Item 8 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

11303888 21347231 PMID: 11454702

Antimetastatic effect of *CpG* DNA mediated by type I IFN.

Hafner M; Zawatzky R; Hirtreiter C; Buurman W A; Echtenacher B; Hehlgans T; Mannel D N

Department of Pathology/Tumor Immunology, University of Regensburg, 93042 Regensburg, Germany.

Cancer research (United States) Jul 15 2001, 61 (14) p5523-8, ISSN 0008-5472 Journal Code: 2984705R

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

Antimetastatic effect of *CpG* DNA mediated by type I IFN.

The mechanisms involved in the antimetastatic effect of *CpG*-containing DNA were investigated in a mouse model of experimental metastasis. Tumor cell colony formation in lungs or livers of mice after i.v. inoculation with syngeneic fibrosarcoma or thymoma cells was determined. The i.v. injection of plasmid DNA or synthetic oligodeoxynucleotides (ODNs) containing unmethylated *CpG* motifs before tumor cell application strongly inhibited metastasis. Because synthetic *CpG*-ODN was not directly tumor cytotoxic, the target cells for this *CpG*-ODN effect were determined. The cytotoxic activity on standard natural killer (NK) targets as well as on fibrosarcoma cells of splenic NK cells and NKT cell-containing liver mononuclear cells derived from *CpG* -ODN-treated mice was strongly enhanced. Participation of NK/NKT cells in the *CpG*-induced antimetastatic effect was demonstrated by reduction of the antimetastatic effect in mice depleted of NK/NKT cells and beta2-microglobulin-deficient mice. Neutralization of interleukin 12, interleukin 18, or IFN-gamma did not interfere with the *CpG*-induced antimetastatic effect. However, in sera of *CpG* -ODN-treated mice, high levels of IFN-alpha were detected, and in IFN-alpha/beta receptor-deficient mice, the *CpG* -ODN-induced antimetastatic effect was strongly reduced. These data indicate that *CpG* -ODNs activate NK/NKT cells for antimetastatic activity indirectly via IFN-alpha/beta receptor activation. The exploitation of the stimulatory activity of *CpG* -ODN for the innate immune system might be a useful strategy for antimetastatic therapy.

Descriptors: *CpG* Islands--genetics--GE; *DNA--administration and dosage --AD; *Interferon Type I--physiology--PH; *Neoplasm Metastasis--prevention and control--PC...; pharmacology--PD; Cytokines--immunology--IM; Cytokines --physiology--PH; Cytotoxicity Tests, Immunologic; DNA--metabolism--ME; DNA Methylation; Dose-Response Relationship, Drug; Interferon Type I --immunology--IM; *Interferon*-*alpha*--immunology--IM; *Interferon*-*alpha*--physiology--PH; Killer Cells, Natural--immunology--IM; Killer Cells, Natural--physiology--PH; Mice; Mice, Inbred C3H; Mice, Inbred C57BL; Mice, Inbred DBA; Mice, Inbred Strains...

Chemical Name: Antibodies, Monoclonal; Cytokines; Interferon Type I; *Interferon*-*alpha*; DNA

5/3,K/9 (Item 9 from file: 155)

DIALOG(R)File 155:MEDLINE(R)

11301447 21341843 PMID: 11449369

Identification of *CpG* oligonucleotide sequences with high induction of IFN-alpha/beta in plasmacytoid dendritic cells.

Krug A; Rothenfusser S; Hornung V; Jahrsdorfer B; Blackwell S; Ballas Z K ; Endres S; Krieg A M; Hartmann G

Department of Internal Medicine, Division of Clinical Pharmacology, University of Munich, Munich, Germany.

European journal of immunology (Germany) Jul 2001, 31 (7) p2154-63, ISSN 0014-2980 Journal Code: 1273201

Contract/Grant No.: CA66570; CA; NCI; DK25295; DK; NIDDK; DK54759; DK; NIDDK

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NL
Record type: Completed

Identification of *CpG* oligonucleotide sequences with high induction of IFN-alpha/beta in plasmacytoid dendritic cells.

The immature plasmacytoid dendritic cell (PDC) is identical with the principal type I IFN-producing cell upon viral infection. Oligodeoxynucleotides which contain unmethylated *CpG* motifs (*CpG* ODN) are recognized by the vertebrate immune system. Previously, we described *CpG* ODN that strongly activate human B cells and human blood dendritic cells. Here we describe distinct *CpG*-containing oligonucleotide sequences which, in contrast to previously described *CpG* ODN, induced high amounts of IFN-alpha and IFN-beta in peripheral blood mononuclear cells (PBMC). Intracellular staining for IFN-alpha revealed that within PBMC *CpG* ODN-induced IFN-alpha is produced exclusively by PDC. Unlike IFN-alpha, TNF-alpha is up-regulated in PDC by all *CpG* ODN tested. Purified PDC responded to *CpG* ODN, demonstrating direct activation of PDC by *CpG* ODN. The most active sequence induced the production of up to 5 pg IFN-alpha per single PDC, resulting in more than 400 ng/ml IFN-alpha in the supernatant of PBMC enriched for PDC. The potency of *CpG* ODN to stimulate IFN-alpha correlated with their ability to stimulate NK cell lytic activity, while purified NK cells did not respond to *CpG* ODN. IFNgamma production in PBMC was dependent on *CpG* ODN-induced IFN-alpha/beta as demonstrated by IFN-alpha/beta blocking antibodies. IFN-alpha-inducing *CpG* ODN strongly supported IFN-gamma production of TCR-triggered CD4 T cells but were less active than other *CpG* ODN in stimulating B cells. In conclusion our results demonstrate that particular *CpG* ODN sequences exist which, due to high IFN-alpha/beta induction in PDC, induce a set of immune responses typical for viral infection.

...; B-Lymphocytes--immunology--IM; CD4-Positive T-Lymphocytes --immunology--IM; Cells, Cultured; Cytotoxicity Tests, Immunologic; Dendritic Cells--drug effects--DE; Interferon Type II--biosynthesis--BI; *Interferon*-*alpha*--biosynthesis--BI; Interferon-beta--biosynthesis--BI; Killer Cells, Natural--immunology--IM; Membrane Glycoproteins--biosynthesis --BI; Stem Cells--drug effects--DE; Stem Cells--immunology--IM; Tumor...

Chemical Name: Adjuvants, Immunologic; Antigens, CD; Antigens, CD80; B7-2 protein; *CPG*-oligonucleotide; Interferon Type I; *Interferon*-*alpha*; Membrane Glycoproteins; Oligodeoxyribonucleotides; Tumor Necrosis Factor; Interferon-beta; Interferon Type II

5/3,K/10 (Item 10 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

11098131 21109081 PMID: 11182147

The plasmid pcDNA3 differentially induces production of *interferon*-*alpha* and interleukin-6 in cultures of porcine leukocytes.

Magnusson M; Johansson E; Berg M; Eloranta M L; Fuxler L; Fossum C

Department of Veterinary Microbiology, Division of Immunology, Swedish University of Agricultural Sciences, BMC, Box 588, S-751 23, Uppsala, Sweden. mattias.magnusson@vmm.slu.se

Veterinary immunology and immunopathology (Netherlands) Jan 10 2001, 78 (1) p45-56, ISSN 0165-2427 Journal Code: 8002006

Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

The plasmid pcDNA3 differentially induces production of *interferon*-*alpha* and interleukin-6 in cultures of porcine leukocytes.

An adjuvant effect of invertebrate DNA has been attributed to its relative high frequency of unmethylated *CpG* dinucleotides. Here we describe the *interferon*-*alpha* (IFN-alpha) and interleukin-6 (IL-6) inducing properties of a commonly used eukaryotic expression vector, pcDNA3, in porcine leukocytes. The magnitude of the cytokine...

... induce IFN-alpha production decrease when the ampicillin resistance

(ampR) gene was replaced with the kanamycin resistance (kanR) gene. However, methylation of all cytidines in *CpG* dinucleotides of pcDNA3 abolished the IFN-alpha inducing capacity. These in vitro results indicate an immunomodulatory role of bacterial DNA also in the pig. Unmethylated *CpG* dinucleotides are crucial for induction of IFN-alpha by the plasmid, but other *CpG* motifs than those within the 5'AACGTT3' sequences of the ampR gene contribute to this induction in porcine cells.

Descriptors: *Interferon*-*alpha*--biosynthesis--BI; *Interleukin-6 --biosynthesis--BI; *Leukocytes--immunology--IM; *Plasmids--immunology--IM; *Swine--immunology--IM; Actinobacillus pleuropneumoniae--immunology--IM; *CpG* Islands--genetics--GE; DNA Methylation; DNA, Complementary--genetics --GE; DNA, Complementary--immunology--IM; Herpesvirus 1, Suid--immunology --IM; *Interferon*-*alpha*--immunology--IM; Interleukin-6--immunology--IM; Leukocytes--metabolism--ME; Mutagenesis, Site-Directed; Phosphatidylethanol amines--immunology--IM; Plasmids--genetics--GE; Specific Pathogen-Free Organisms; Swine--blood--BL...

Chemical Name: DNA, Complementary; *Interferon*-*alpha*; Interleukin-6; Phosphatidylethanolamines; Plasmids; Vaccines, DNA; 1,2-dielaidoylphosphati dylethanolamine

5/3,K/11 (Item 11 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

11086085 21103256 PMID: 11160284

Distinct *CpG* DNA and polyinosinic-polycytidylic acid double-stranded RNA, respectively, stimulate CD11c- type 2 dendritic cell precursors and CD11c+ dendritic cells to produce type I IFN.

Kadowaki N; Antonenko S; Liu Y J

Department of Immunobiology, DNAX Research Institute of Molecular and Cellular Biology, Palo Alto, CA 94304, USA. kadowaki@kuhp.kyoto-u.ac.jp

Journal of immunology (Baltimore, Md. : 1950) (United States) Feb 15 2001, 166 (4) p2291-5, ISSN 0022-1767 Journal Code: 2985117R

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

Distinct *CpG* DNA and polyinosinic-polycytidylic acid double-stranded RNA, respectively, stimulate CD11c- type 2 dendritic cell precursors and CD11c+ dendritic cells to produce type I IFN.

Two classes of nucleic acids, bacterial DNA containing unmethylated *CpG* motifs and dsRNA in viruses, induce the production of type I IFN that contributes to the immunostimulatory effects of these microbial molecules. Thus, it is important to determine which cells produce type I IFN in response to *CpG* DNA and dsRNA. CD4(+)CD11c(-) type 2 dendritic cell precursors (pre-DC2) were identified as the main producers of type I IFN in human blood in response to viruses. Here we asked whether pre-DC2 also produce type I IFN in response to *CpG* DNA and dsRNA. Oligodeoxynucleotides containing particular palindromic *CpG* motifs induced pre-DC2, but not CD11c(+) blood DC or monocytes, to produce IFN-alpha. In contrast, a synthetic dsRNA, polyinosinic polycytidylic-acid, induced CD11c(+) DC, but not pre-DC2 or monocytes, to produce IFN-alphabeta. These data indicate that *CpG* DNA and polyinosinic-polycytidylic acid stimulate different types of cells to produce type I IFN and that it is important to select oligodeoxynucleotides containing particular *CpG* motifs to induce pre-DC2 to produce type I IFN, which may play a key role in the strong adjuvant effects of *CpG* DNA.

; Cell Differentiation--immunology--IM; Cell Survival--immunology--IM; Cells, Cultured; Dendritic Cells--cytology--CY; Dendritic Cells --metabolism--ME; *Interferon*-*alpha*--biosynthesis--BI; Interferon-beta --biosynthesis--BI; Interleukin-12--biosynthesis--BI; Myeloid Cells --immunology--IM; Myeloid Cells--metabolism--ME; Stem Cells--cytology--CY; Stem Cells--metabolism...

Chemical Name: *CPG*-oligonucleotide; Complement 4-Binding Protein; Interferon Inducers; Interferon Type I; *Interferon*-*alpha*;

Oligodeoxyribonucleotide[redacted] RNA, Double-Stranded; Interle[redacted]n-12; Poly I-C; Interferon-beta

5/3,K/12 (Item 12 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

10937640 20493557 PMID: 10924517
Regulation of the promoter activity of interferon regulatory factor-7 gene. Activation by interferon snd silencing by hypermethylation.
Lu R; Au W C; Yeow W S; Hageman N; Pitha P M
Oncology Center and Department of Molecular Biology and Genetics, The Johns Hopkins University School of Medicine, Baltimore, Maryland 21231, USA.
Journal of biological chemistry (UNITED STATES) Oct 13 2000, 275 (41) p31805-12, ISSN 0021-9258 Journal Code: 2985121R
Contract/Grant No.: R01 AI19737-17; AI; NIAID
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

... cells. We have further shown that the previously observed lack of expression of IRF-7 in 2fTGH fibrosarcoma cell line, correlated with hypermethylation of the *CpG* island in the human IRF-7 promoter. The repression of the promoter activity was relieved by treatment with DNA methyltransferase inhibitor 5-aza-deoxycytidine. In...
Descriptors: DNA Methylation--drug effects--DE; *DNA-Binding Proteins --genetics--GE; *Gene Silencing--drug effects--DE; **Interferon*-*alpha* --pharmacology--PD; *Promoter Regions (Genetics)--genetics--GE; *Trans-Activation (Genetics)--drug effects--DE; Azacitidine--analogs and derivatives--AA; Azacitidine--pharmacology--PD; Base Sequence; Cloning, Molecular; *CpG* Islands--genetics--GE; DNA--genetics--GE; DNA--metabolism --ME; DNA-Binding Proteins--metabolism--ME; Introns--genetics--GE; Molecular Sequence Data; Mutation--genetics--GE; Oligodeoxyribonucleotides --genetics...
Chemical Name: DNA-Binding Proteins; IRF-7 protein; *Interferon*-*alpha*; Oligodeoxyribonucleotides; Transcription Factors; interferon-stimulated gene factor 3; 5-aza-2'-deoxycytidine; Azacitidine; DNA

5/3,K/13 (Item 13 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

10853888 20401099 PMID: 10944802
Multiple effects of immunostimulatory DNA on T cells and the role of type I interferons.
Sun S; Zhang X; Tough D; Sprent J
R.W. Johnson Pharmaceutical Research Institute, La Jolla, CA 92121, USA.
Springer seminars in immunopathology (GERMANY) 2000, 22 (1-2) p77-84 , ISSN 0172-6641 Journal Code: 7910384
Contract/Grant No.: AI32068; AI; NIAID; CA25803; CA; NCI; CA38355; CA; NCI; +
Document type: Journal Article; Review; Review, Tutorial
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

... elsewhere in this volume, the DNA of infectious agents--and indeed of all non-vertebrates tested--differs from mammalian DNA in being enriched for unmethylated *CpG* motifs. With appropriate flanking sequences, *CpG* DNA and synthetic *CpG* ODNs cause strong activation of APCs and other cells. In this article we have focussed on the capacity of *CpG* DNA/ODNs to alter T cell function. Whether these compounds act directly on T cells or function indirectly by activating other cells, especially APCs, is controversial [7, 8, 13, 14]. In contrast to other workers [8], we have yet

to find definitive evidence that *CpG* DNA/ODN can provide a co-stimulatory signal for purified T cells subjected to TCR ligation ([14] and unpublished data of authors). For this reason we lean to the notion that *CpG* DNA/ODNs modulate T cell function by inducing activation of APC rather than by acting directly on T cells. When injected in vivo in the absence of specific antigen, *CpG* DNA/ODNs have two striking effects on T cells, namely (1) induction of overt activation (proliferation) of memory-phenotype CD8+ cells, and (2) partial activation of all T cells, including naive-phenotype T cells. Both actions of *CpG* DNA/ODNs are heavily dependent on the production of IFN-I by APC. For memory-phenotype (CD44hi) CD8+ cells, neither *CpG* DNA nor IFN-I can cause proliferation of purified APC-depleted T cells in vitro. Hence, under in vivo conditions, *CpG* DNA-induced proliferation of CD44hi CD8+ cells is probably mediated through the production of a secondary cytokine, i.e., by a cytokine that is directly...

... likely that the effector cytokine is IL-15. With this assumption, our current model is that proliferation of CD44hi CD8+ cells induced by injection of *CpG* DNA/ODNs reflects production of IFN-I which, in turn, leads to synthesis of IL-15. Which particular cell types produce these two cytokines is...
... although APCs are probably of prime importance. In addition to inducing proliferation of memory-phenotype CD8+ cells via IL-15, the IFN-I induced by *CpG* DNA/ODNs can also induce partial activation of naive T cells. This form of activation leads to up-regulation of CD69 and other molecules but ...

... is presumably a reflection of APC activation, but direct evidence on this issue is still lacking. In this article we have emphasized that contact with *CpG* DNA/ODNs has multiple effects on T cell function in vivo. Many of these effects seem to be related to the production of certain cytokines by APCs, notably IFN-I and IL-15. It should be stressed, however, that *CpG* DNA/ODNs probably lead to the production of many other cytokines. Hence, our current models of how *CpG* DNA/ODNs influence T cell function are undoubtedly oversimplified.
Descriptors: Adjuvants, Immunologic--pharmacology--PD; *DNA--immunology --IM; **Interferon*-*alpha*--physiology--PH; *T-Lymphocytes--drug effects --DE; Bacteria--genetics--GE; Bacteria--immunology--IM; CD8-Positive T-Lymphocytes--drug effects--DE; CD8-Positive T-Lymphocytes--immunology --IM; Cell Differentiation--drug effects--DE; *CpG* Islands--immunology--IM ; Cytokines--physiology--PH; Fungi--genetics--GE; Fungi--immunology--IM; Immunologic Memory--drug effects--DE; Interferon Inducers--pharmacology--PD ; Interleukin-15--physiology--PH...
Chemical Name: Adjuvants, Immunologic; Cytokines; Interferon Inducers; *Interferon*-*alpha*; Interleukin-15; Poly I-C; DNA

5/3,K/14 (Item 14 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

10806586 20347367 PMID: 10888644
DNA vaccines encoding viral glycoproteins induce nonspecific immunity and Mx protein synthesis in fish.
Kim C H; Johnson M C; Drennan J D; Simon B E; Thomann E; Leong J A
Department of Microbiology, Center for Salmon Disease Research, Oregon State University, Corvallis, Oregon 97331, USA.
Journal of virology (UNITED STATES) Aug 2000, 74 (15) p7048-54, ISSN 0022-538X Journal Code: 0113724
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

; Amino Acid Sequence; Antibodies, Viral--blood--BL; Antibodies, Viral --immunology--IM; *CpG* Islands; Fish Diseases--immunology--IM; Fish Diseases--prevention and control--PC; Fish Diseases--virology--VI;

Glycoproteins--genetics--GE; *Interferon*-*alpha*--biosynthesis--BI; *Interferon*-*alpha*--immunology--IM; Interferon-beta--biosynthesis--BI; Interferon-beta--immunology--IM; Molecular Sequence Data; Neutralization Tests; Plasmids--genetics--GE; Rhabdoviridae--classification--CL; Rhabdoviridae--genetics--GE; Rhabdoviridae...

Chemical Name: Antibodies, Viral; Glycoproteins; *Interferon*-*alpha*; Plasmids; Proteins; Vaccines, DNA; Viral Proteins; Viral Vaccines; protein Mx; Interferon-beta

5/3,K/15 (Item 15 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

10507377 20040430 PMID: 10570325

Anti-double-stranded DNA antibodies and immunostimulatory plasmid DNA in combination mimic the endogenous IFN-alpha inducer in systemic lupus erythematosus.

Vallin H; Perers A; Alm G V; Ronnblom L

Section of Immunology, Department of Veterinary Microbiology, Swedish University of Agricultural Sciences, Uppsala, Sweden.

Journal of immunology (Baltimore, Md. : 1950) (UNITED STATES) Dec 1 1999, 163 (11) p6306-13, ISSN 0022-1767 Journal Code: 2985117R

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

... human monoclonal anti-ss/dsDNA Ab had the same effect. This IFN-alpha-inducing activity of the plasmid was abolished by methylation, suggesting that unmethylated *CpG* DNA motifs were important. Like IIF in SLE serum, the combination of SLE-IgG and pcDNA3 appeared to stimulate IFN-alpha production in natural IFN...

Descriptors: Autoantibodies--immunology--IM; *DNA--immunology--IM; **Interferon*-*alpha*--secretion--SE; *Lupus Erythematosus, Systemic--immunology--IM; *Plasmids--immunology--IM

Chemical Name: Antigen-Antibody Complex; Autoantibodies; Cytokines; Immunoglobulin G; *Interferon*-*alpha*; Plasmids; DNA

5/3,K/16 (Item 16 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

09185921 97063439 PMID: 8907306

1.8-megabases fine physical map encompassing IFNAR and AML1 loci on human chromosome 21q22.1.

Eki T; Abe M; Furuya K; Fujishima N; Kishida H; Shiratori A; Yokoyama K; Le Paslier D; Cohen D; Murakami Y

Division of Human Genome Research, The Institute of Physical and Chemical Research (RIKEN), Koyadai, Tsukuba, Ibaraki, Japan.

DNA sequence : the journal of DNA sequencing and mapping (SWITZERLAND) 1996, 6 (2) p95-108, ISSN 1042-5179 Journal Code: 9107800

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

A long-range restriction map of the 1.8-megabases (mb) region encompassing the area between the *interferon*-*alpha* receptor and the acute myelogenous leukemia loci on human chromosome 21q22.1 was constructed after analysis of both the contiguous yeast artificial chromosome (YAC) clones...

... markers including 4 Not I-linking STSs to be ordered and mapped physically. Comparison of the maps revealed that the proximal region contains more unmethylated *CpG* islands than the distal region, which suggests that many expressed genes are in the proximal region. This fine

consensus physical map will be informative and...

Chemical Name: AML1 protein; Chromosomes, Artificial, Yeast; DNA Primers; Receptors, Interferon; Transcription Factors; *interferon* *alpha* receptor

5/3,K/17 (Item 17 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

08946693 96279653 PMID: 8662521

Immunostimulatory DNA sequences necessary for effective intradermal gene immunization.

Sato Y; Roman M; Tighe H; Lee D; Corr M; Nguyen M D; Silverman G J; Lotz M; Carson D A; Raz E

Department of Medicine and The Sam and Rose Stein Institute for Research on Aging, University of California, San Diego, 9500 Gilman Drive, La Jolla, CA 92093-0663, USA.

Science (UNITED STATES) Jul 19 1996, 273 (5273) p352-4, ISSN 0036-8075 Journal Code: 0404511

Contract/Grant No.: AI36214; AI; NIAID; AI37305; AI; NIAID; AR41897; AR; NIAMS; +

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

... not necessarily induce immune responses to the encoded antigens. Instead, the immunogenicity of plasmid DNA (pDNA) requires short immunostimulatory DNA sequences (ISS) that contain a *CpG* dinucleotide in a particular base context. Human monocytes transfected with pDNA or double-stranded oligonucleotides containing the ISS, but not those transfected with ISS-deficient pDNA or oligonucleotides, transcribed large amounts of *interferon*-*alpha* , interferon-beta, and interleukin-12. Although ISS are necessary for gene vaccination, they down-regulate gene expression and thus may interfere with gene replacement therapy...

; Amino Acid Sequence; Base Sequence; *CpG* Islands; DNA--chemistry--CH; DNA--genetics--GE; Gene Expression Regulation; Genetic Vectors; Injections, Intradermal; Interferons--biosynthesis--BI; Interleukin-12 --biosynthesis--BI; Mice; Mice, Inbred BALB...

5/3,K/18 (Item 18 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

08026016 94148994 PMID: 8106512

Human interferon regulatory factor 2 gene. Intron-exon organization and functional analysis of 5'-flanking region.

Cha Y; Deisseroth A B

Department of Hematology, University of Texas M. D. Anderson Cancer Center, Houston 77030.

Journal of biological chemistry (UNITED STATES) Feb 18 1994, 269 (7) p5279-87, ISSN 0021-9258 Journal Code: 2985121R

Contract/Grant No.: CA16672; CA; NCI; PO1 CA49639-01A1; CA; NCI; PO1 CA55164; CA; NCI

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

...potential regulatory elements in the 5'-flanking region, and localized the IRF-2 gene on human chromosome 4. The IRF-2 promoter region contains a *CpG* island, with several GC boxes, a putative NF-kappa B-binding site, and a CAAT box, but no TATA box. When the promoter region was linked with a heterologous reporter gene, we found that the promoter region is inducible by both interferons (*interferon*-*alpha* and -gamma) and interferon regulatory factor 1. The region which induced these inductions was identified as being confined to 40 nucleotides 5' to the major...

5/3,K/19 (Item 19 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

04012906 82267363 PMID: 6180062
Heterogeneity of human gamma interferon preparations: evidence for presence of alpha interferon.
Wiranowska-Stewart M
Journal of interferon research (UNITED STATES) Feb 1981, 1 (2) p315-21, ISSN 0197-8357 Journal Code: 8100396
Contract/Grant No.: AI-16439; AI; NIAID
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

... Pokeweed mitogen) had low levels of cross-species antiviral activity on bovine cells (approximately 1-5%) and were not neutralized by antisera to either human *interferon* *alpha* (HulFN-alpha) or beta (HulFN-beta). After purification on controlled pore glass beads (*CPG*) these preparations could be fractionated into a minor component which was highly active on bovine cells and a major component that was virtually inactive on ...

... the major, lowly cross-active component was pH2 labile and was not neutralized by either anti-HulFN-alpha or HulFN-beta antisera. Chromatography of a *CPG* -purified mitogen-induced IFN preparation on anti-HulFN-alpha Sepharose showed that, while the large majority of HulFN-gamma preparations passed through the column, a...

5/3,K/20 (Item 1 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

13758857 BIOSIS NO.: 200200387678
***CpG* motifs in bacterial DNA and their immune effects.**
BOOK TITLE: Annual Review of Immunology
AUTHOR: Krieg Arthur M(a)
BOOK AUTHOR/EDITOR: Paul William E; Fathman C Garrison; Glimcher Laurie H: Eds
AUTHOR ADDRESS: (a)Department of Veterans Affairs Medical Center, Iowa City, IA, 52246**USA E-Mail: akrieg@coleypharma.com
JOURNAL: Annual Review of Immunology 20p709-760 2002
MEDIUM: print
BOOK PUBLISHER: Annual Reviews, 4139 El Camino Way, Palo Alto, CA, 94303-0139, USA
ISSN: 0732-0582 ISBN: 0-8243-3020-8 (cloth)
DOCUMENT TYPE: Book
RECORD TYPE: Citation
LANGUAGE: English

***CpG* motifs in bacterial DNA and their immune effects.**
DESCRIPTORS:
CHEMICALS & BIOCHEMICALS: *CpG*-containing oligodeoxynucleotides...
...IFN-alpha {*interferon*-*alpha*}--...

...bacterial DNA *CpG* motifs

5/3,K/21 (Item 2 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

13742115 BIOSIS NO.: 200200370936

BDCA-2, a novel type II [redacted]type lectin specifically expres[redacted]d on plasmacytoid dendritic cells, mediates antigen-capture and is a potent inhibitor of *interferon*-*alpha*/beta induction.
AUTHOR: Schmitz Juergen(a); Dzionek Andrzej(a); Sohma Yoshiaki; Nagafune Jun; Cella Marina; Colonna Marco; Yamaguchi Yasunori
AUTHOR ADDRESS: (a)Research and Development, Miltenyi Biotec GmbH, Friedrich-Ebert-Strasse 68, Bergisch Gladbach, Nordrheinwestfalen, D-51429**Germany
JOURNAL: FASEB Journal 16 (5):pA1237 March 22, 2002
MEDIUM: print
CONFERENCE/MEETING: Annual Meeting of Professional Research Scientists on Experimental Biology New Orleans, Louisiana, USA April 20-24, 2002
ISSN: 0892-6638
RECORD TYPE: Abstract
LANGUAGE: English

BDCA-2, a novel type II C-type lectin specifically expressed on plasmacytoid dendritic cells, mediates antigen-capture and is a potent inhibitor of *interferon*-*alpha*/beta induction.
...ABSTRACT: BDCA-2 potently suppresses induction of IFN-alpha/beta-production in PDC by influenza virus, the combination of anti dsDNA mAb and unmethylated plasmid DNA, *CpG* oligodeoxynucleotides, a killed streptococcal preparation (OK432), and serum from patients with SLE, presumably by a mechanism dependent on calcium mobilization and protein-tyrosine phosphorylation by src-family protein-tyrosine kinases. Thus, triggering of BDCA-2 represents an attractive therapeutic strategy for blocking production of *interferon*-*alpha*/beta in SLE patients.
DESCRIPTORS:
CHEMICALS & BIOCHEMICALS: ...antigen capture capture mediator, plasmacytoid dendritic cell expression, potent *interferon*-*alpha* -beta induction inhibitor

5/3,K/22 (Item 3 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

13735343 BIOSIS NO.: 200200364164
The development of murine plasmacytoid dendritic cell precursors is differentially regulated by FLT3-ligand and granulocyte/macrophage colony-stimulating factor.
AUTHOR: Gilliet Michel; Boonstra Andre; Paturel Carine; Antonenko Svetlana; Xu Xiu-Ling; Trinchieri Giorgio; O'Garra Anne; Liu Yong-Jun(a)
AUTHOR ADDRESS: (a)DNAX Research Institute, 901 California Ave., Palo Alto, CA, 94304-1104**USA E-Mail: yong-jun.liu@dnax.org
JOURNAL: Journal of Experimental Medicine 195 (7):p953-958 April 1, 2002
MEDIUM: print
ISSN: 0022-1007
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

...ABSTRACT: large amounts of IFN-alpha in responses to herpes simplex virus, and the capacity to respond to ligands for Toll-like receptor 9 (TLR-9; *CpG* ODN 1668), but not to ligands for TLR-4 (lipopolysaccharide (LPS)). Unlike human IPCs which produce little IL-12p70, mouse IPCs produce IL-12p70 in response to *CpG* ODN 1668 and herpes simplex virus. This study demonstrates that the development of murine CD11c+CD11b-B220+Gr-1+ IPCs and CD11c+CD11b+B220- myeloid...
DESCRIPTORS:
CHEMICALS & BIOCHEMICALS: ...*CpG* ODN 1668...

...*interferon*-*alpha*--

5/3,K/23 (Item 4 from file: 5)

DIALOG(R)File 5:Biosis Previews(R)

13724996 BIOSIS NO.: 200200353817
Novel and cell-specific activities of ISS (immunostimulatory sequence) ODNs in human preDC2s and B cells.
AUTHOR: Marshall Jason D(a); Subramanian Sandhya(a); Abbate Christi(a); Van Nest Gary(a)
AUTHOR ADDRESS: (a)Preclinical, Dynavax Technologies Corp., 717 Potter St., Ste. 100, Berkeley, CA, 94710**USA
JOURNAL: FASEB Journal 16 (4):pA321-A322 March 20, 2002
MEDIUM: print
CONFERENCE/MEETING: Annual Meeting of the Professional Research Scientists on Experimental Biology New Orleans, Louisiana, USA April 20-24, 2002
ISSN: 0892-6638
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: We have defined a number of ISS (immunostimulatory sequence) ODNs containing *CpG* motifs that exhibit differential potencies in their induction of IFN-gamma or IFN-alpha from human PBMCs. To further characterize their activity, we examined highly...
DESCRIPTORS:
CHEMICALS & BIOCHEMICALS: ...IFN-alpha {*interferon*-*alpha*}; ...

...*CpG* motif, immunostimulatory sequence

5/3,K/24 (Item 5 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
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13724830 BIOSIS NO.: 200200353651
Regulation of IFN-alpha production in plasmacytoid dendritic cells by *CpG* oligonucleotides and CD40 ligand.
AUTHOR: Kerkmann Miren(a); Sarris Anja(a); Endres Stefan(a); Hartmann Gunther(a)
AUTHOR ADDRESS: (a)Department of Internal Medicine, Division of Clinical Pharmacology, Ludwig-Maximilians-University, Ziemssenstr.1, Munich, Bavaria, 80336**Germany
JOURNAL: FASEB Journal 16 (4):pA291 March 20, 2002
MEDIUM: print
CONFERENCE/MEETING: Annual Meeting of the Professional Research Scientists on Experimental Biology New Orleans, Louisiana, USA April 20-24, 2002
ISSN: 0892-6638
RECORD TYPE: Abstract
LANGUAGE: English

Regulation of IFN-alpha production in plasmacytoid dendritic cells by *CpG* oligonucleotides and CD40 ligand.

...ABSTRACT: cell (PDC) is characterized by the ability to produce large quantities of type I IFN upon viral infection. Recently we identified a new type of *CpG* ODN (*CpG* type A, prototype ODN 2216) which, in contrast to earlier sequences (*CpG* type B, prototype ODN 2006), stimulates very high amounts of type I IFN in PDC (400 ng/ml IFN-alpha) similar to a viral infection. Here we demonstrate that not only the amount but also the pathway of type I IFN induction differs between both types of *CpG* ODN. Blockade of the type I IFN receptor inhibited the production of IFN-alpha induced by *CpG* type A but even increased IFN-alpha production by *CpG* type B. CD40L which by itself was relatively poor at inducing IFN-alpha in PDC synergistically enhanced IFN-alpha production of *CpG* type B which was not reduced by type I IFN receptor blockade. Despite lower IFN-alpha induction, *CpG* type B was more potent than *CpG* type A to upregulate CD80, CD86, CD40 and MHC II on PDC. This effect was not dependent on functional type I IFN receptor

for both *CpG* type A and *CpG* type B. In conclusion, positive autocrine feedback loop via the type I IFN receptor is involved in the pathway which regulates IFN-alpha induction by *CpG* type A but not by *CpG* type B and CD40L. The different regulatory pathways of *CpG* type A and *CpG* type B in PDC support the concept that a distinct receptor molecule is involved in the recognition of *CpG* type A.
DESCRIPTORS:
CHEMICALS & BIOCHEMICALS: ...*CpG* oligonucleotides...
...IFN-alpha {*interferon*-*alpha*}--

5/3,K/25 (Item 6 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

13724813 BIOSIS NO.: 200200353634
Distinct *CpG* ODN with high IFN-alpha induction drive monocytes towards an activated phenotype which promotes the development of effector memory CD8 T cells.
AUTHOR: Sarris Anja(a); Krug Anne(a); Selinger Sibylle(a); Rothenfusser Simon(a); Bock Carmen(a); Jahrsdoerfer Bernd(a); Endres Stefan(a); Hartmann Gunther(a)
AUTHOR ADDRESS: (a)Department of Internal Medicine, Division of Clinical Pharmacology, Ludwig-Maximilians-University Munich, Ziemssenstrasse 1, Munich, Munich, 80336**Germany
JOURNAL: FASEB Journal 16 (4):pA288 March 20, 2002
MEDIUM: print
CONFERENCE/MEETING: Annual Meeting of the Professional Research Scientists on Experimental Biology New Orleans, Louisiana, USA April 20-24, 2002
ISSN: 0892-6638
RECORD TYPE: Abstract
LANGUAGE: English

Distinct *CpG* ODN with high IFN-alpha induction drive monocytes towards an activated phenotype which promotes the development of effector memory CD8 T cells.

ABSTRACT: Recently we identified a new type of *CpG* ODN which is characterized by the induction of high amounts of type I IFN in plasmacytoid dendritic cells resulting in strong NK cell activation. In the present study we examined the effects of this type of *CpG* ODN on human primary monocytes. In PBMC stimulated with *CpG* ODN and GMCSF, monocytes rapidly increased in size and granularity and within three days developed a phenotype characterized by partial downregulation of CD14, increased surface...

...memory T cells. Consistent with the lack of IL-12, Th1 versus Th2 bias of CD4 T cells was not affected. The generation of this *CpG* ODN-induced monocyte-derived cell type was dependent on the presence of IFN-alpha, but the addition of recombinant IFN-alpha was not sufficient for...
DESCRIPTORS:
CHEMICALS & BIOCHEMICALS: *CpG* ODN...

...IFN-alpha {*interferon*-*alpha*}--

5/3,K/26 (Item 7 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

13722597 BIOSIS NO.: 200200351418
IFN-alphabeta promote priming of antigen-specific CD8+ and CD4+ T lymphocytes by immunostimulatory DNA-based vaccines.
AUTHOR: Cho Hearn Jay(a); Hayashi Tomoko; Datta Sandip K; Takabayashi Kenji ; Van Uden John Henry; Horner Anthony; Corr Maripat; Raz Eyal
AUTHOR ADDRESS: (a)Division of Hematology/Medical Oncology, New York

Presbyterian Hospital, [redacted] East 68th Street, New York, N[redacted]10021**USA
E-Mail: hjc2001@med.cornell.edu
JOURNAL: Journal of Immunology 168 (10):p4907-4913 May 15, 2002
MEDIUM: print
ISSN: 0022-1767
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Immunostimulatory sequence (ISS) DNA containing unmethylated *CpG* dinucleotides stimulate NK and APC to secrete proinflammatory cytokines, including IFN-alphabeta and -gamma, TNF-alpha, and IL-6 and -12, and to express costimulatory...
DESCRIPTORS:
CHEMICALS & BIOCHEMICALS: ...antitumor activity, immunostimulatory DNA-based vaccine priming, *interferon*-*alpha*-beta-induced priming promotion...

...antitumor activity, immunostimulatory DNA-based vaccine priming, *interferon*-*alpha*-beta-induced priming promotion

5/3,K/27 (Item 8 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
(c) 2002 BIOSIS. All rts. reserv.

13535039 BIOSIS NO.: 200200163860
From A to Z on *CpG*.
AUTHOR: Krieg Arthur M(a)
AUTHOR ADDRESS: (a)Coley Pharmaceutical Group, 93 Worcester Street, Suite 101, Wellesley, MA, 02481**USA E-Mail: akrieg@coleypharma.com
JOURNAL: Trends in Immunology 23 (2):p64-65 February, 2002
MEDIUM: print
ISSN: 1471-4906
RECORD TYPE: Citation
LANGUAGE: English

From A to Z on *CpG*.
DESCRIPTORS:
CHEMICALS & BIOCHEMICALS: *CpG* motifs...

...*interferon*-*alpha*;

5/3,K/28 (Item 9 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
(c) 2002 BIOSIS. All rts. reserv.

13361757 BIOSIS NO.: 200100568906
Type I interferon is required to mount an adaptive response to immunostimulatory DNA.
AUTHOR: Van Uden John H; Tran Christine H; Carson Dennis A; Raz Eyal(a)
AUTHOR ADDRESS: (a)Department of Medicine, University of California, San Diego, 9500 Gilman Drive, La Jolla, CA, 92093-0663: eraz@ucsd.edu**USA
JOURNAL: European Journal of Immunology 31 (11):p3281-3290 November, 2001
MEDIUM: print
ISSN: 0014-2980
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English
SUMMARY LANGUAGE: English

ABSTRACT: Immunostimulatory DNA sequences (ISS, *CpG* motifs) potently stimulate Th1 and cytotoxic T lymphocyte (CTL) responses to antigens and have thus generated considerable interest due to their potential use in immunotherapeutics...

DESCRIPTORS:
CHEMICALS & BIOCHEMICALS: IFN-alpha/beta receptor {*interferon*-*alpha* /beta receptor...

...*CpG* motifs, ISS, sequences

5/3,K/29 (Item 10 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

13320281 BIOSIS NO.: 200100527430
Toll-like receptor expression reveals *CpG* DNA as a unique microbial stimulus for plasmacytoid dendritic cells which synergizes with CD40 ligand to induce high amounts of IL-12.
AUTHOR: Krug Anne; Towarowski Andreas; Britsch Stefanie; Rothenfusser Simon ; Hornung Veit; Bals Robert; Giese Thomas; Engelmann Hartmut; Endres Stefan; Krieg Arthur M; Hartmann Gunther(a)
AUTHOR ADDRESS: (a)Division of Clinical Pharmacology, Medizinische Klinik Innenstadt, Klinikum der LMU, Ziemssenstrasse 1, D-80336, Munich: ghartmann@lrz.uni-muenchen.de**Germany
JOURNAL: European Journal of Immunology 31 (10):p3026-3037 October, 2001
MEDIUM: print
ISSN: 0014-2980
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English
SUMMARY LANGUAGE: English

Toll-like receptor expression reveals *CpG* DNA as a unique microbial stimulus for plasmacytoid dendritic cells which synergizes with CD40 ligand to induce high amounts of IL-12.

...ABSTRACT: pattern of Toll-like receptor (TLR) expression. TLR1-TLR9 were examined in purified PDC and MDC. TLR9, which is critically involved in the recognition of *CpG* motifs in mice, was present in PDC but not in MDC. TLR4, which is required for the response to LPS, was selectively expressed on MDC. Consistent with TLR expression, PDC were susceptible to stimulation by *CpG* oligodeoxynucleotide (ODN) but not by LPS, while MDC responded to LPS but not to *CpG* ODN. In PDC, *CpG* ODN supported survival, activation (CD80, CD86, CD40, MHC class II), chemokine production (IL-8, IP-10) and maturation (CD83). CD40 ligand (CD40L) and *CpG* ODN synergized to activate PDC and to stimulate the production of IFN-alpha and IL-12 including bioactive IL-12 p70. Previous incubation of PDC with IL-3 decreased the amount of *CpG*-induced IFN-alpha and shifted the cytokine response in favor of IL-12. *CpG* ODN-activated PDC showed an increased ability to stimulate proliferation of naive allogeneic CD4 T cells, but Th1 polarization of developing T cells required simultaneous activation of PDC by CD40 ligation and *CpG* ODN. *CpG* ODN-stimulated PDC expressed CCR7, which mediates homing to lymph nodes. In conclusion, our studies reveal that IL-12 p70 production by PDC is under strict control of two signals, an adequate exogenous microbial stimulus such as *CpG* ODN, and CD40L provided endogenously by activated T cells. Thus, *CpG* ODN acts as an enhancer of T cell help, while T cell-controlled restriction to foreign antigens is maintained.
DESCRIPTORS:
CHEMICALS & BIOCHEMICALS: ...*CpG* DNA...

...IFN-alpha {*interferon*-*alpha*};

5/3,K/30 (Item 11 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

13286212 BIOSIS NO.: 200100493361

Subsets of human dendritic cell precursors express different toll-like receptors and respond to different microbial antigens.
AUTHOR: Kadowaki Norimitsu; Ho Stephen; Antonenko Svetlana; de Waal Malefyt Rene; Kastelein Robert A; Bazan Fernando; Liu Yong-Jun(a)
AUTHOR ADDRESS: (a)DNAX Research Institute, 901 California Ave., Palo Alto, CA, 94304: yong-jun.liu@dnax.org**USA
JOURNAL: Journal of Experimental Medicine 194 (6):p863-869 September 17, 2001
MEDIUM: print
ISSN: 0022-1007
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English
SUMMARY LANGUAGE: English

...ABSTRACT: TLR4 (lipopolysaccharide), by producing tumor necrosis factor (TNF)-alpha and interleukin (IL)-6. In contrast, plasmacytoid pre-DCs only respond to the microbial TLR9-ligand, *CpG*-ODNs (oligodeoxynucleotides (ODNs) containing unmethylated *CpG* motifs), by producing IFN-alpha. CD11c+ imDCs preferentially express TLR 1, 2, and 3 and respond to TLR 2-ligand PGN by producing large amounts...
DESCRIPTORS:
CHEMICALS & BIOCHEMICALS: ...*interferon*-*alpha*;

5/3,K/31 (Item 12 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

13109519 BIOSIS NO.: 200100316668
Role of *CpG* dinucleotides in a lupus-related oligodeoxynucleotide that activates natural *interferon*-*alpha* producing cells.
AUTHOR: Magnusson M(a); Magnusson S(a); Vallin H(a); Ronnblom L; Alm G(a)
AUTHOR ADDRESS: (a)Dept. of Veterinary Immunology, Biomedical Center, University Hospital, Uppsala**Sweden
JOURNAL: Lupus 10 (Supplement 1):pS30 2001
MEDIUM: print
CONFERENCE/MEETING: Sixth International Lupus Conference Barcelona, Spain March 24-28, 2001
ISSN: 0961-2033
RECORD TYPE: Citation
LANGUAGE: English
SUMMARY LANGUAGE: English

Role of *CpG* dinucleotides in a lupus-related oligodeoxynucleotide that activates natural *interferon*-*alpha* producing cells.
DESCRIPTORS:
...ORGANISMS: PARTS ETC: natural *interferon*-*alpha* producing cells
CHEMICALS & BIOCHEMICALS: *CpG* dinucleotides...
...IFN-alpha {*interferon*-*alpha*};

5/3,K/32 (Item 13 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

13003510 BIOSIS NO.: 200100210659
***Interferon*-*alpha*/-beta-mediated activation of human gammadelta T cells and NK cells by *CpG* oligonucleotides.**
AUTHOR: Rothenfusser S(a); Hornung V(a); Krug A(a); Krieg A M; Endres S(a); Hartmann G(a)
AUTHOR ADDRESS: (a)Division of Clinical Pharmacology, Department of Internal Medicine, Ludwig-Maximilians-University, Munich**Germany
JOURNAL: Immunobiology 203 (1-2):p448 November, 2000
MEDIUM: print
CONFERENCE/MEETING: Joint Annual Meeting of the German and Dutch Societies

of Immunology Duseldorf, Germany November 29-December 02, 2000
ISSN: 0171-2985
RECORD TYPE: Citation
LANGUAGE: English
SUMMARY LANGUAGE: English

***Interferon*-*alpha*/-beta-mediated activation of human gammadelta T cells and NK cells by *CpG* oligonucleotides.**
DESCRIPTORS:
...ORGANISMS: PARTS ETC: *CpG* oligonucleotide role, blood and lymphatics , immune system, *interferon*-*alpha*-beta-mediated activation

5/3,K/33 (Item 14 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

13003445 BIOSIS NO.: 200100210594
***CpG* ODN enhance recall and primary peptide-specific human CTL responses.**
AUTHOR: Hornung V(a); Rothenfusser S(a); Ayyoub M; Krug A(a); Endres S(a); Speiser D E; Hartmann G(a)
AUTHOR ADDRESS: (a)Division of Clinical Pharmacology, Department of Internal Medicine, Ludwig-Maximilians-University, Munich**Germany
JOURNAL: Immunobiology 203 (1-2):p356 November, 2000
MEDIUM: print
CONFERENCE/MEETING: Joint Annual Meeting of the German and Dutch Societies of Immunology Duseldorf, Germany November 29-December 02, 2000
ISSN: 0171-2985
RECORD TYPE: Citation
LANGUAGE: English
SUMMARY LANGUAGE: English

***CpG* ODN enhance recall and primary peptide-specific human CTL responses.**
DESCRIPTORS:
CHEMICALS & BIOCHEMICALS: *CpG* oligonucleotides {*CpG* ODN...

...IFN-alpha {*interferon*-*alpha*};

5/3,K/34 (Item 15 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

12980781 BIOSIS NO.: 200100187930
Effects of an experimental infection with Actinobacillus pleuropneumoniae on the *interferon*-*alpha* and interleukin-6 producing capacity of porcine peripheral blood mononuclear cells stimulated with bacteria, virus or plasmid DNA.
AUTHOR: Johansson E(a); Fossum C; Fuxler L; Wallgren P
AUTHOR ADDRESS: (a)Department of Veterinary Microbiology, Division of Immunology, BMC, SLU, S-751 23, Uppsala: elin.johansson@vmm.slu.se** Sweden
JOURNAL: Veterinary Microbiology 79 (2):p171-182 20 March, 2001
MEDIUM: print
ISSN: 0378-1135
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English
SUMMARY LANGUAGE: English

Effects of an experimental infection with Actinobacillus pleuropneumoniae on the *interferon*-*alpha* and interleukin-6 producing capacity of porcine peripheral blood mononuclear cells stimulated with bacteria, virus or plasmid DNA.

ABSTRACT: The effect of a bacterial infection on *interferon*-*alpha*

(IFN-alpha) and interleukin-6 (IL-6) production by porcine cells was studied in specific pathogen-free (SPF) pigs, infected intranasally with Actinobacillus pleuropneumoniae serotype...
DESCRIPTORS:
...ORGANISMS: PARTS ETC: bacteria-stimulated cells, blood and lymphatics, immune system, *interferon*-*alpha* producing capacity, interleukin-6 producing capacity, plasmid DNA-stimulated cells, virus-stimulated cells
CHEMICALS & BIOCHEMICALS: *CpG*-DNA...

...*interferon*-*alpha*;

5/3,K/35 (Item 16 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

12834910 BIOSIS NO.: 200100042059
Adjuvant activities of the immune response modifiers, R-848 and imiquimod: Comparison with *CpG* ODN.
AUTHOR: Vasilakos J P(a); Gibson S J(a); Lindh J M(a); Pederson L K(a); Reiter M J(a); Smith M H; Smith R M(a); Tomai M A(a)
AUTHOR ADDRESS: (a)Department of Pharmacology, 3M Pharmaceuticals, Saint Paul, MN, 55144**USA
JOURNAL: FASEB Journal 14 (6):pA1130 April 20, 2000
MEDIUM: print
CONFERENCE/MEETING: Joint Annual Meeting of the American Association of Immunologists and the Clinical Immunology Society Seattle, Washington, USA May 12-16, 2000
ISSN: 0892-6638
RECORD TYPE: Citation
LANGUAGE: English
SUMMARY LANGUAGE: English

Adjuvant activities of the immune response modifiers, R-848 and imiquimod: Comparison with *CpG* ODN.
DESCRIPTORS:
CHEMICALS & BIOCHEMICALS: *CpG* ODN...
...*interferon*-*alpha*;

5/3,K/36 (Item 17 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

12746200 BIOSIS NO.: 200000499823
Adjuvant activities of immune response modifier R-848: Comparison with *CpG* ODN.
AUTHOR: Vasilakos John P(a); Smith Rose M A(a); Gibson Sheila J(a); Lindh Jana M(a); Pederson Linda K(a); Reiter Michael J(a); Smith Michael H; Tomai Mark A(a)
AUTHOR ADDRESS: (a)Department of Pharmacology, 3M Center, 3M Pharmaceuticals, Saint Paul, MN, 55144**USA
JOURNAL: Cellular Immunology 204 (1):p64-74 August 25, 2000
MEDIUM: print
ISSN: 0008-8749
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English
SUMMARY LANGUAGE: English

Adjuvant activities of immune response modifier R-848: Comparison with *CpG* ODN.

...ABSTRACT: aspects of acquired immunity, including immunoglobulin secretion, in vivo cytokine production, and Ag-specific T cell cytokine

production. Results are compared with those of Th1 *CpG* ODN. R-848 and *CpG* ODN are effective at skewing immunity in the presence of Alum toward a Th1 Ab response (IgG2a) and away from a Th2 Ab response (IgE). R-848 and *CpG* ODN are also capable of initiating an immune response in the absence of additional adjuvant by specifically enhancing IgG2a levels. Both R-848 and imiquimod showed activity when given subcutaneously or orally, indicating that the compound mechanism was not through generation of a depot effect. Although *CpG* ODN behaves similarly to R-848, *CpG* ODN has a distinct cytokine profile, is more effective than R-848 when given with Alum in the priming dose, and is active only when...
DESCRIPTORS:
CHEMICALS & BIOCHEMICALS: *CpG* ODN...

...IFN-alpha {*interferon*-*alpha*};

5/3,K/37 (Item 18 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

12283791 BIOSIS NO.: 200000037293
Applications of immune stimulatory *CpG* DNA for antigen-specific and antigen-nonspecific cancer immunotherapy.
AUTHOR: Krieg A M(a); Ballas Z K(a); Hartmann G; Weiner G J(a)
AUTHOR ADDRESS: (a)VA Medical Center, University of Iowa Cancer Center, University of Iowa, Iowa City, IA**USA
JOURNAL: European Journal of Cancer 35 (SUPPL. 5):pS10 Oct., 1999
CONFERENCE/MEETING: 5th International Symposium on the Biological Therapy of Cancer: From Basic Research to Clinical Applications Munich, Germany October 27-30, 1999
SPONSOR: Biological Therapeutics Development Group of the European Organisation for Research and Treatment of Cancer
ISSN: 0959-8049
RECORD TYPE: Citation
LANGUAGE: English

Applications of immune stimulatory *CpG* DNA for antigen-specific and antigen-nonspecific cancer immunotherapy.
DESCRIPTORS:
CHEMICALS & BIOCHEMICALS: IFN-alpha {*interferon*-*alpha*}--

5/3,K/38 (Item 19 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

12161662 BIOSIS NO.: 199900456511
How BCG led to the discovery of immunostimulatory DNA.
AUTHOR: Tokunaga Tohru(a); Yamamoto Toshiko; Yamamoto Saburo
AUTHOR ADDRESS: (a)Fukuoka Jo-Gakuin University, 3-42-1, Osa, Minami-ku, Fukuoka, 811-1313**Japan
JOURNAL: Japanese Journal of Infectious Diseases 52 (1):p1-11 Feb., 1999
ISSN: 1344-6304
DOCUMENT TYPE: Literature Review
RECORD TYPE: Abstract
LANGUAGE: English
SUMMARY LANGUAGE: English

...ABSTRACT: invertebrates, but not from vertebrates and plants, showed the above-mentioned biologic activities, and (ii) the activities were completely dependent on particular base sequences having *CpG* motifs but in a senseless manner. Details of those early studies carried out mainly in the 1980's have been reviewed in the first part...

...Research interests of immunostimulatory DNA were galvanized in 1995 by

the report of Krieg et showing murine B cell activat with bacterial DNA containing *CpG* motifs. Within a short period of time, a huge number of papers have been published in this field, and the study has expanded rapidly and...
DESCRIPTORS:
CHEMICALS & BIOCHEMICALS: ...IFN-alpha {*interferon*-*alpha*};

5/3,K/39 (Item 20 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

11890157 BIOSIS NO.: 199900136266
Coupling of *CpG* motif immunostimulatory DNA to ragweed allergen amba 1 induces a Th1 response to allergen.
AUTHOR: Tighe H(a); Takabayashi K; Schwartz D; Malo M; Beck L; Zhu J; Hall D; Marsden R; Spiegelberg H; Raz E
AUTHOR ADDRESS: (a)Dynavax Technol. Corp., San Diego, CA 92121**USA
JOURNAL: Journal of Allergy and Clinical Immunology 103 (1 PART 2):pS48 Jan., 1999
CONFERENCE/MEETING: 55th Annual Meeting of the American Academy of Allergy, Asthma and Immunology Orlando, Florida, USA February 26-March 3, 1999
SPONSOR: American Academy of Allergy, Asthma, and Immunology
ISSN: 0091-6749
RECORD TYPE: Citation
LANGUAGE: English

Coupling of *CpG* motif immunostimulatory DNA to ragweed allergen amba 1 induces a Th1 response to allergen.
DESCRIPTORS:
CHEMICALS & BIOCHEMICALS: ...*interferon*-*alpha*; ...

...*CpG* motif immunostimulatory oligonucleotide allergen conjugates...
...*CpG* motif immunostimulatory DNA

5/3,K/40 (Item 21 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

11143394 BIOSIS NO.: 199799764539
Unmethylated *CpG* DNA protects mice from lethal Listeria monocytogenes challenge.
BOOK TITLE: Vaccines (Cold Spring Harbor); Molecular approaches to the control of infectious diseases
AUTHOR: Krieg Arthur M; Love-Homan Laurie; Yi Ae-Kyung; Harty John T
BOOK AUTHOR/EDITOR: Brown F; Burton D; Doherty P; Mekalanos J: Eds
AUTHOR ADDRESS: Veterans Affairs Med. Cent., Univ. Iowa, Iowa City, IA 52242**USA
JOURNAL: Vaccines (Cold Spring Harbor) 97p77-79 1997
BOOK PUBLISHER: Cold Spring Harbor Laboratory Press, 10 Skyline Drive, Plainview, New York 11803, USA
CONFERENCE/MEETING: Fourteenth Annual Meeting on Modern Approaches to the Control of Infectious Diseases Cold Spring Harbor, New York, USA September 9-13, 1996
ISSN: 0899-4056 ISBN: 0-87969-516-1
RECORD TYPE: Citation
LANGUAGE: English

Unmethylated *CpG* DNA protects mice from lethal Listeria monocytogenes challenge.
MISCELLANEOUS TERMS: ...*CPG* DNA...

...*INTERFERON*-*ALPHA*;

5/3,K/41 (Item 22 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

08772522 BIOSIS NO.: 199395061873
A novel interferon-inducible domain: Structural and functional analysis of the human interferon regulatory factor 1 gene promoter.
AUTHOR: Sims Simon H; Cha Ying; Romine Margaret F; Gao Pei-Qing; Gottlieb Keith; Deisseroth Albert B(a)
AUTHOR ADDRESS: (a)Dep. Hematol., Univ. Tex. M.D. Anderson Cancer Cent., Houston, Tex. 77030
JOURNAL: Molecular and Cellular Biology 13 (1):p690-702 1993
ISSN: 0270-7306
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: We have cloned and functionally characterized the human interferon regulatory factor 1 (IRF-1) gene promoter. The promoter contains a *CpG* island, with several GC boxes, a CAAT box, but no TATA box. IRF-1 mRNA is strongly induced by gamma interferon (IFN-gamma) but more...
MISCELLANEOUS TERMS: ...*INTERFERON*-*ALPHA*;

5/3,K/42 (Item 1 from file: 73)
DIALOG(R)File 73:EMBASE

11690326 EMBASE No: 2002252968
Characterization of a new subpopulation of mouse CD8alphaSUP+ B220SUP+ dendritic cells endowed with type 1 interferon production capacity and tolerogenic potential
Martin P.; Del Hoyo G.M.; Anjuere F.; Fernandez Arias C.; Hernandez Vargas H.; Fernandez-L A.; Parrillas V.; Ardavin C.
C. Ardavin, Department of Cell Biology, Faculty of Biology, Complutense University, 28040 Madrid Spain
AUTHOR EMAIL: ardavin@bio.ucm.es
Blood (BLOOD) (United States) 15 JUL 2002, 100/2 (383-390)
CODEN: BLOOA ISSN: 0006-4971
DOCUMENT TYPE: Journal ; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH
NUMBER OF REFERENCES: 38

...potential, located in the thymus, bone marrow, spleen, and lymph nodes. B220SUP+ DCs display ultrastructural characteristics resembling those of human plasmacytoid cells and accordingly produce *interferon*-*alpha* after virus stimulation. B220SUP+ DCs acquired a strong antigen-presenting cell capacity on incubation with *CpG* oligodeoxynucleotides, concomitant with a remarkable up-regulation of MHC and costimulatory molecules and the production of interleukin-12 (IL-12) and IL-10. Importantly, our...
MEDICAL DESCRIPTORS:
cell maturation; major histocompatibility complex; T lymphocyte activation; thymus; bone marrow; spleen; lymph node; cell ultrastructure; antigen presenting cell; *CpG* island; lymphocyte differentiation; lymphocyte proliferation; nonhuman; mouse; controlled study; animal tissue; animal cell; article; priority journal

5/3,K/43 (Item 2 from file: 73)
DIALOG(R)File 73:EMBASE

11566015 EMBASE No: 2002137447
Topical immunmodulation in dermatology

TOPISCHE IMMUNMODULATION IN DER DERMATOLOGIE
Hengge U.R.
Dr. U.R. Hengge, Klin. und Poliklin. fur Dermatol., Venerol./Allergol. Univ. Klin. Essen, Hufelandstr. 55, 45122 Essen Germany
AUTHOR EMAIL: ulrich.hengge@uni-essen.de
H+G Zeitschrift fur Hautkrankheiten (H G Z. HAUTKR.) (Germany) 2002, 77/3 (116-130)
CODEN: ZHKRA ISSN: 0301-0481
DOCUMENT TYPE: Journal ; Review
LANGUAGE: GERMAN SUMMARY LANGUAGE: ENGLISH; GERMAN
NUMBER OF REFERENCES: 133

...g. common warts) and autoimmune diseases (e.g. alopecia areata). Newer agents such as imidazoquinolines (imiquimod and resiquimod) act by cytokine secretion from monocytes/macrophages (*interferon*-*alpha*, interleukin-12, tumour-necrosis factor-alpha). The locally generated immune milieu leads to a ThSUB1-dominance and cell-mediated immunity that have been clinically used...
...presentation by dendritic cells, they also act on B-cells leading to the synthesis of antibodies such as IgGSUB2a much like the recently discovered immunostimulatory *CpG* sequences that stimulate innate immunity. These sequences act as "danger signals" as they occur in bacterial and viral DNA but are selectively methylated and inactivated...

5/3,K/44 (Item 3 from file: 73)
DIALOG(R)File 73:EMBASE

11535073 EMBASE No: 2002106732
Antiangiogenesis agents
Cortes-Funes H.
Dr. H. Cortes-Funes, Hospital Universitario 12 de Octubre, Avda. Cordoba km. 5-4, 28041 Madrid Spain
Drugs of Today (DRUGS TODAY) (Spain) 2002, 38/SUPPL. 1 (11-19)
CODEN: MDACA ISSN: 0025-7656
DOCUMENT TYPE: Journal ; Conference Paper
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH
NUMBER OF REFERENCES: 10

...other growth factor families specific to vascular endothelial cells and work together with VEGF in vascular biology. In contrast, thrombospondin-1, angiostatin, endostatin, vasostatin and *interferon*-*alpha*, among others, are endogenous inhibitors of angiogenesis and inhibit endothelial proliferation and migration. Thus, the extent of angiogenesis is determined by the local balance between...
BRAND NAME/MANUFACTURER NAME: bb 2516/Biotech; ag 3340/Agouron; bms 275291/Bms; neovastat/Aeterna; su 5416/Sugen; su 6668/Sugen; su 5416/Pharmacia; su 6668/Pharmacia; *cpg* 4125/Novartis; emd 121974/Merck; bay 12 9566
DRUG TERMS (UNCONTROLLED): *cpg* 4125

5/3,K/45 (Item 4 from file: 73)
DIALOG(R)File 73:EMBASE

10547303 EMBASE No: 2000008595
Oligodeoxyribonucleotides with 5'-ACGT-3' or 5'-TCGA-3' sequence induce production of interferons
Yamamoto S.; Yamamoto T.; Tokunaga T.
S. Yamamoto, Dept. of Bacterial/Blood Products, Natl. Inst. of Infectious Diseases, 4-7-1 Gakuen, Musashimurayama, Tokyo 208-0011 Japan
Current Topics in Microbiology and Immunology (CURR. TOP. MICROBIOL. IMMUNOL.) (Germany) 1999, 247/- (23-39)
CODEN: CTMIA ISSN: 0070-217X
DOCUMENT TYPE: Journal; Review